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Original Communications.

ARTICLE I.—*Therapeutics of the Electro-Thermal Bath; Embracing the Use of Induced and Galvanic Currents in such a Bath.* By JUSTIN HAYES, M.D., Chicago.

In the lithographs, Fig. 1 represents the helix and key-board, and Fig. 2 the electro-thermal bath tub. The letters by the switches on the key-board, and electrodes in the tub, are arranged alphabetically, except the switches Q and R, which represent the off currents, and N, which connects the battery current with the helix. The switch A is connected by a wire to the head-plate A in the tub; the switches B C are connected with the B C electrodes in the tub; and so on in alphabetical order till you reach the foot electrodes L and M. O represents the commutator or current-changer; P the rheotome, and S the electro-magnet or core. The head-plate, or electrode, is a piece of sheet copper, the form oblong, and breadth seven inches; this is attached to the centre of the head of the tub, and covered by a perforated board; over this is placed a rubber cloth insulator, to protect the spine from the direct action of the current; this insulator may be narrowed at pleasure by rolling it on the sides, so the current may approach still nearer

to the spinal cord when the condition of the patient indicates it; in cases where the current should be applied directly to the spine, while lying in the bath, it should be removed.

GENERAL CURRENTS IN THE ELECTRO-THERMAL BATH.

These currents are termed *general* because they are given off from so many electrodes, consequently exerting a general influence on the whole system, tranquilizing and producing tonic, and stimulating; or sedative and depressing effects, according to the strength and duration of the applied currents. The switches on Fig. 1 are set for the general currents; these are the currents that are used when the patient is first placed in the bath, and are switched on before the patient comes out, let the other treatment during the time they are in the bath be as varied as it may be. The head-plate is positive, and all the other electrodes in the tub are negative. In cases where the negative bath is required in the beginning of the treatment (which is the exception), raise the handle of the commutator; this reverses the currents, making the head-plate negative and the other electrodes positive. To make it a galvanic bath, insulate one arm of the commutator by slipping a piece of paper under it, and connect the galvanic battery to the key-board, having another commutator and current selector for this current, and you are enabled to make all the changes in directing this current, that you are with the induced current in the electro-thermal bath first mentioned. The galvanic current should be so connected with the cells of the battery, that you may add from one to three elements at a time, till you have the desired amount. It is also quite necessary to have the current connected with a galvanometer, that you may know the strength of the current, when it is conducted to the bath; and when treating very sensitive patients the rheostat should be connected, for this current is one that will do great good or great harm, according to its use; and the physician should always know the amount that he is using, and closely observe the immediate effect upon his patient, before leaving him in the hands of the operator. The two coils, which enter into the construction of the faradaic apparatus, from which the induced currents for the electro-thermal bath are obtained, are composed of thick and short wire, which give a quantity rather than intensity current. The helix and key-board represented in Fig. 1 were made

to the order of the late Dr. Young, of Cleveland, Ohio, with the exception of an increased number of keys, which I have added to meet the improvements I have made in the tub electrodes, (which improvements are offered to the profession free of charge.) Dr. Young patented his invention, and it is now held by Dr. John C. Mairs, Steubenville, Ohio.

Twelve years ago, while residing in Cleveland, Ohio, I was invited by Dr. Young to observe the effects of the electro-thermal bath on his patients, which I did occasionally for about six months. Although his theory as to the bath "reproducing diseases" was erroneous, and his treatment hap-hazard, I became convinced that his invention was an advance over anything of the kind that I had a knowledge of, and that its efficacy in treating diseases that the bath was appropriate for, might prove a great success when properly prescribed and used by scientific physicians. I purchased two baths and the apparatus pertaining thereto, which were somewhat similar, and after using them for a few months I discarded one, and have made my improvements from the one previously mentioned.

As there has been no scientific work or essay on the use of the electro-thermal bath, (embracing the use of induced and galvanic currents in such a bath,) I desire to place some of my experience before the profession. At the same time I wish to be understood that in my practice I have ever eschewed hobby-riding, and sought the best means of the profession for my patients.

To prepare the electro-thermal bath for a patient, it is necessary to know if the patient is very sensitive to warm or cool water; the bath should be of a temperature to meet the feelings of the patient pleasurably on first going into it. As a general rule it should be prepared at 98° Fahrenheit, and gradually increased till it reaches in some extreme cases 110°; the guide for increasing the temperature must be the patient's feelings, as no set rule can be given for every case. The time in the bath ranges from eight to thirty minutes; the first one taken should not be more than ten or twelve minutes; the effects of this bath will serve as a guide to the time occupied in subsequent treatment of the case. The patient lies down in the bath, being covered at the same time with a canton flannel sheet, the head resting on a sponge which is under or on napkins folded above the insulator, the feet resting against the foot

of the tub, unless the patient is too short to reach it, then they should be supported by a foot-adjuster; a small napkin wet in cold water, wrung out so as not to drip, should be placed on the forehead; then turn the switch N on to the post, as shown in Fig. 1; this sends the currents at once through the water to the patient. Before connecting the current to the helix, be sure that the core is nearly out of the coil, so that the patient will not receive too much of the current in the beginning, and, to make this doubly sure, when through treating a patient, disconnect switch A, as well as N, so that when you begin to treat the next patient, should you forget to withdraw the core in starting the machine, the patient will receive no electricity till you connect the head-plate by the switch A, and this will be very sure to call the attention of the operator to the position of the core. As soon as the currents are conducted to the patient, the operator should at once commence dipping with a handled dipper which holds about one quart, pouring the water gently on the upper part of the chest, beginning on the opposite side of the patient, and bringing it around to the side next the front of the tub; this is continued more or less during the treatment. Increase the temperature of the water from the beginning, by a small stream till the patient feels warm enough; push the core in to give the current intensity enough to be perceptible to the patient. These currents should be continued from three to five minutes, then take the electrode connected with the positive off-current R, place it on a soft wet sponge, turn the sheet down to the hips, throw off switch A, grasp the sponge firmly in the hand, and apply the back of the fingers over the region of the liver — that the operator may feel the strength of the current, and test the sensibility of the patient to its action; if it gives no pain, apply the sponge, pressing it gently, carrying it over the spleen, then downwards in the course of the descending colon to the left iliac fossa, passing across the lower part of the abdomen to the right iliac fossa, and from here up the course of the ascending colon, continuing over the transverse colon and the small intestines; then apply it, as in the beginning, over the region of the liver, repeating the manipulation three or four times; then spread the sheet back over the chest, switch on A, as in the beginning of the treatment, and proceed as at first, until one minute before the expiration of the time; then place your hand under the neck

to assist the patient in sitting up in the tub; throw off switch A; take the electrode connected with the positive off-current R, place it in the sponge, and press the sponge on the nape of the neck a little one side of the spine, carrying it down the whole length of the back, alternating from side to side from three to five times, carrying it *near* the spine but not directly on it. This finishes the bath, given in general debility.

The patient should be well dried off, and afterwards rubbed with the dry hand if there is any chilliness. A small handful of salt is usually thrown into the bath, unless iron is indicated in the case; then use from one to two ounces of the following solution:

R. Ferri Sulphatis, ... oz. j.
Acidi Sulphurici, ... oz. iij.
Aquæ puræ, ... oz. viij.
M.
S. Use in each bath from one to two ounces.

Seven years ago, in giving the iron bath, I used from one to two drachms ferri sulphatis, making the bath turbid, and staining everything it came in contact with; thus making it necessary for the patient to take another bath of clear water to free the surface of the body from the iron stains. At that time, Mr. Varley, of London, the electrician of the Atlantic Cable Co., was receiving my treatment. One of the remedies prescribed was the electrical iron bath; when he learned how it was prepared, he said that in his experiments he had discovered how to make a water solution of the ferri sulphatis clear, by adding acidi sulphurici, so that it would not stain a piece of white linen when dipped in it. From his suggestion the above formula was made.

Mr. E——, a resident of Chicago, came to me in July, 1871, for treatment. He was about forty years of age, of good habits, and was suffering from general debility without any apparent cause; he was not overtaxed in any way, as his business required no more of his time than he chose to give it—the pulse feeble, about sixty-four per minute; tongue slightly furred; did not suffer pain; complained of nothing but weariness and want of ambition, and felt worse about 11 A. M., showing a slight climatical periodicity; had a poor appetite most of the time, when he did relish his food and eat to satiety felt heavy and less disposition to exercise; bowels torpid,

and skin inclined to be dry; urine normal, but a little less in quantity than when in health; slept well the first of the night, but restless and uneasy the latter part of it. I prescribed the electro-thermal bath with iron, as previously directed for cases of general debility; time in bath ten minutes; advised him to take another the next day, which he did; he slept a little better and was not quite as stupid at 11 A. M. I prescribed, in connection with this treatment, the following:

R. Quiniæ Sulphatis, ... gr. xij.
Piperinæ, ... gr. iiij.
M. Fiat pulv. No. xij.
S. Take one at meals and bedtime.

Advised him to come in the day following for treatment. On his return the third day he said he felt but little better, and feared it was not the right treatment for him—was afraid the warm water would make him weak. I said to him that I was confident if he would continue treatment for eight or ten days, he would be pretty well. I prescribed the foot-bath with the *vitalized* treatment, to be alternated with the electro-thermal bath, as previously given. The vitalized treatment was given, as follows: His feet were placed in a foot-bath at 98° Fahrenheit, and gradually raised to 101° with the negative electrode in the water, the positive electrode in a soft sponge and placed by the operator over the region of the liver—with an intensity current appreciable to the patient—from here it was passed over the right pectoralis major muscle, across the chest to the left pectoralis major muscle, down the side over the spleen to the left iliac fossa, across the lower part of the abdomen to the right iliac fossa, up the ascending colon and over the transverse, finishing the circuit over the small intestines. This was repeated twice, then the sponge was grasped in the left hand of the operator, the right hand carried slowly over the chest and abdomen, following the same course as the sponge, for four or five times. Then the sponge with the positive electrode was placed on the nape of the neck, one side of the spine and carried down the whole length of the spine, alternating twice from side to side. This was followed by using the hand for an electrode as in treating the chest and abdomen, carrying the hand over the spine, as well as at each side. The treatment was concluded by the patient holding the sponge with the positive electrode for three minutes—

time of treatment being twelve minutes. The tenth day he was so well that he required no more treatment.

The following cases will show the treatment for arresting the growth of fibrous tumors of the uterus:

CASE 1. Mrs. E——, aged forty-two years—from the central part of the State; came for treatment in the spring of 1867 (the exact date I am unable to give, being destroyed in the fire, Oct. 9th, 1871), suffering with intra-mural fibrous tumor, and menorrhagia. Upon examination, I found the case to be a very serious one, and advised her husband to get a physician who had experience in the treatment of ladies, for counsel. Dr. DeLaskie Miller was called; his diagnosis concurred with mine as to the nature of the tumor. He thought her general health might be improved—had but little, if any, encouragement to give as to removing the tumor. As to the use of electricity in such cases he had had no experience; suggested the use of iodine externally over the abdomen, and iodide and bromide potassa internally; which was given according to the following formula:

R. Potassii Iodidi, } . . . *aa* dr. vj.
Potassii Bromidi, }
Syr. Sarsaparillæ Comp., . . . oz. viij.
M.
S. Take one teaspoonful three times a day.

Upon examining the uterus, the os was found in an irregular nodulated condition, and within one inch of the labia majora, the os tincæ opened so that it would admit the index finger, three-quarters of an inch; the uterus was about the size of a quart bowl, and irregular in form. In the year 1848, she commenced having profuse hemorrhage at her menstrual period, lasting from one to three weeks; this continued up to the time she came to consult me. Some of her physicians had ascertained that she had a tumor, and within four or five years previous to her coming to me, she could both see and feel the enlargement above the pubis. She was very much emaciated, exhausted and mentally depressed; and as she never had received any permanent benefit from her physicians, did not expect it now. The treatment was commenced by applying iodine over the abdomen, then taking the electro-thermal bath with iron, commencing with the currents as recommended in general debility; a vaginal injection of tepid water, as soon as she was

comfortable in the bath, this followed by a bromine wash, according to the following formula :

℞. Bromine, ... gtt. viij.
Aqua Dist., ... oz. iiij.
M.
S. Use one teaspoonful in two tablespoonsful of tepid water once a day.

After taking the general currents three minutes, having the temperature properly increased, all the switches that carried the currents to the tub were disconnected except I; then H was connected to the upper post, making a concentrated transverse current through the abdomen to the tumor; changing the direction of the currents, by changing the commutator, alternating from positive to negative, and negative to positive, four or five times; with an intensity current that caused a perceptible motion of the abdomen from side to side, when the current was changed; this was continued two minutes, then H was disconnected from the upper post, the operator taking the positive off-current R, placing the electrode in a sponge, pressing it firmly over the tumor on the opposite side of the abdomen from the I electrode, which is connected with the I switch; changing the commutator four or five times; then disconnecting I and connecting J and K, as shown in Fig. 1, placing the sponge with the positive electrode on the abdomen over the upper part of the tumor; this was continued two minutes; then the switches were connected for the general currents as in Fig. 1, these were continued two minutes, and the treatment was concluded by sponging the back as previously directed. This treatment was repeated daily for one week, when her menses appeared; they were less than usual at the commencement, and the hemorrhage was much less; the fifth day I placed a tampon of cotton wool containing ferri subsulphatis, gr. iij, zinci sulphatis, dried, gr. ij, and introduced it as far up as I could in the os uteri. The sixth day there was very little hemorrhage; the seventh she was able to resume the former treatment, which was continued till her menses appeared again; at this time they were nearly normal, and she was not confined to her room at all during this period. The flow ceased the sixth day from commencement. On the fifth day I prescribed the vitalized treatment with foot-bath as previously described, with this exception: the positive electrode was in the foot-bath and the negative in the hand of the operator,

until the last three minutes of the treatment, when the negative electrode was placed in the hands of the patient; this was continued two minutes when the current was reversed and this continued one minute; this concluded the treatment; the following day it was repeated; the seventh day she resumed again the former treatment.

She was under treatment eight weeks, when she left for home; promising to return if she was worse. The uterus was diminished about one-third in size and her general health very much improved. She returned four or five months afterwards. I then made an examination and found the tumor still smaller than when she left; as she was feeling quite well she wished to remain only for a few days' treatment. I heard from her a few months since; then she was attending to her household duties and felt no inconvenience from her former trouble.

(To be continued.)

ARTICLE II.—*Quantity and Intensity, as applied to Faradaic Electricity.* Read before the Chicago Society of Physicians and Surgeons, Sept. 22, 1873, by PLYM. S. HAYES, M.D.

It is a significant fact, that very few physicians understand the construction of the electrical instruments they use, and the principles that govern and modify the generation of electricity by the various kinds of apparatus. Knowing this to be the case, and that some essential principles have been overlooked in the manufacture of faradaic instruments, which have lessened their value as therapeutic agents, has induced us to place before the profession some of the overlooked principles. We hope by this means to be able, in a measure, to explain why different results have been obtained, by different physicians in similar cases, by the application of faradaic electricity.

A little more than forty years ago, Faraday discovered that instantaneous currents were generated in metallic conductors, either under the influence of similar conductors transmitting currents of electricity, or by the influence of powerful magnets. He even went so far as to use the magnetism of the earth—the greatest

of all known magnets—to generate these currents, which he termed currents of induction, or induced currents. This form of electricity is commonly called faradaic (from the discoverer of it) or induced electricity.

After the discovery of these principles, instruments for the generation of faradaic electricity came rapidly into use, as therapeutic agents, on account of the amount of electricity generated, the ease with which it could be manipulated, and the small size of the instrument.

The simplest form of the instrument consists of two coils, or helices of insulated wire, the one within the other, but thoroughly insulated from each other; within the inner coil, and extending through it, is the core or electro-magnet, of soft iron wires. Connected with the inner or inducing coil is a galvanic cell; there being intercalated in the circuit a rheotome, or current breaker. The ends of the wire which forms the outer or inductive coil, terminate in the poles.

It might be well, in order to get a clearer idea of what follows, to give at least the essential physiological differences between frictional and galvanic electricity. We have chosen these two forms because they occupy the extremes of that molecular force, and consequently their physiological actions are more distinctly marked. So different in their various phenomena are these two forms, that for a time some scientists thought that they might be two different forces, as unlike as magnetism and electricity. Since the discovery of Faraday they have been proven to be the same force, for by modifying the faradaic apparatus, electricity may be obtained, which in one case is identical with frictional, in another with galvanic, and in a third seems to combine in one—although in a limited degree—the properties of both of these forms. All of the differences in the physical and physiological phenomena of frictional and galvanic electricity, are due to the difference in degree of the *quantity* and *intensity* that each possesses.

Quantity, as applied to electricity, is that property in virtue of which electricity can produce a given amount of chemical action in a unit of time; while *intensity* in electricity is that property in virtue of which electricity can overcome resistance, such, for instance, as is encountered in traversing a poorly conducting medium. To illustrate this, the quantity and intensity of electricity might

be compared with quantity and intensity as applied to heat. For instance, the intensity of the heat found in the jet of the oxyhydrogen blow-pipe is much greater than that found in a blast furnace; but the quantity of heat found in the latter is much greater than that of the oxyhydrogen jet.

From the foregoing definitions it is readily seen that the galvanic current is of great quantity and small intensity, as compared with frictional electricity, in which intensity predominates, and quantity exists only in a slight degree. For instance, Weber has calculated that if the amount of positive frictional electricity required to decompose a grain of water were accumulated on a cloud at a distance of 3,000 feet from the earth's surface, it would exert an attractive force upon the earth of upwards of 1,500 tons. Thus it is that these two forms differ from each other simply in degree and not in character.

A few of the most important differences in the physiological phenomena of these two varieties of electricity, are as follows:

The galvanic current, when made to act upon the skin, produces a sense of heat, redness and inflammation; and even destruction of the skin and contiguous tissues may follow the application, if the current be powerful and the application be sufficiently prolonged.	If sparks from a common electrical machine be applied to the skin, a sense of prickling and pain is felt, and if the sparks are large, the skin is reddened and a papular eruption resembling the *lichen urticatus* is produced.
The effects of galvanic electricity on the muscles are to produce, at the instant of opening and closing the circuit, a contraction; and during the application of the current—if it is sufficiently strong—a tremulous muscular motion, and sensation.	Frictional electricity simply produces a muscular contraction at each discharge, provided the sparks be large.
Galvanic electricity affects prominently the nerve centres and nerves of special sense. With regard to the latter a sensation may be called forth which corresponds to a sensation peculiar to the special nerve, under the influence of the current; we can—so to speak—see, taste, smell and hear this form of electricity. Its action on the nerve centres is manifested by vertigo, syncope, nausea, and even convulsions.	Frictional electricity does not perceptibly affect the nerve centres and nerves of special sense (if possibly we exclude its action on the optic nerve), unless the shock be so severe as to endanger the life of the subject operated on.

Galvanic electricity tends to chemically decompose the fluids and solids of the body, at the place of contact of the applied electrodes.

The chemical effects of frictional electricity on the human body are not perceptible.

From the intermediate position that faradaic electricity occupies, it can, under certain conditions, produce similar effects on the skin, muscles, nerve centres, and some of the nerves of special sense, that an interrupted galvanic current of medium quantity and intensity does; and will also produce on the skin and muscles effects similar to that produced by frictional electricity. Combining, as it does, the properties of these extremes, its effects on the animal economy are not as distinctly marked as in the employment of the galvanic or frictional forms alone; and the results obtained in certain instances by faradaic electricity are different from those obtained by either of the other varieties.

Faradaic currents of different quantity and intensity may be obtained, first, by modifying the quantity and intensity of the galvanic or inducing current, and, second, by varying the length and diameter of the wire used in the construction of the coils.

In regard to the galvanic current, it should be generated from a single cell, or series of cells arranged as a single one, with large metallic surface. The amount of surface would have to be varied according to the form of battery used, to get the same amount of quantity in each case; for the different batteries differ from each other in electro-motive force. In this case *quantity* is the essential element to be sought for, if we desire a faradaic current of *great quantity;* for it is a self-evident truth, that from a given amount of a force you cannot generate a greater. Neither can you, from a given quantity of galvanic electricity, by means of a faradaic apparatus, generate electricity of greater quantity than that possessed by the inducing current, for then would perpetual motion be achieved. To illustrate this principle, let us represent the quantity of the galvanic current by ten, the quantity of electricity induced by this current in a faradaic apparatus would be represented by three or four.

The intensity of the induced current is proportional to the intensity of the inducing current.

The quantity and intensity of the faradaic current is still further modified by the length and diameter of the wire employed in the

manufacture of the coils. It is a well known fact, and one which is the underlying principle in the manufacture of several medical and telegraphic instruments, that a current of electricity is resisted, in its passage through a conductor, directly in proportion to its length, and inversely as to its diameter; thus a long or fine wire resists the passage of a current much more than does a short or thick wire of the same metal. The difference in the conductivity of metals need not be dwelt on in this connection, as copper is the one usually employed in the construction of the coils. If the wire is long and fine, considerable intensity of current is required to overcome the resistance offered by it; and, conversely, a current generated in such a wire will be of considerable intensity; such, for instance, as is generated by a Ruhmkorff's coil; the length of the wire in the outer coil in some of the largest sizes of these machines is sixty miles, and the diameter of the wire one-fifth of a millimeter. From such an instrument sparks of a number of inches in length may be obtained.

By shortening and enlarging the wire, keeping up all of the time the proportion between the outer and inner coils, currents are obtained which are of greater quantity and less intensity than are found in the Ruhmkorff instruments, or those usually employed for medical use, provided the galvanic current remains the same.

To recapitulate that which has been said in regard to the wire: "The thinner the wire the greater the tension of the induced electricity," is the statement made by Ganot. Wm. Crookes, in the *Quarterly Journal of Science*, speaking of the induction of electricity from magnets—for the laws discovered by Faraday regarding the generation of induced from galvanic currents are, in a measure, as applicable to the generation of currents from magnets—says, "the quantity of the current likewise differs according to the kind of wire surrounding the armature, a *short thick wire producing effects of quantity, and a long thin wire, of intensity.*"

The faradaic instruments for therapeutic purposes in general use seem to have been manufactured solely to produce a given amount of intensity, overlooking entirely the element of quantity.

That in many cases great benefit has been derived from the ordinary instruments, none will deny; but that the same amount of good may be obtained with less pain to the patient, and that results which have not been achieved by faradaic currents of intensity

have been by those of quantity, are clearly demonstrated by our experience.

With faradaic quantity currents, the deep seated muscles and those remote from the points of contact of the electrodes, but in the course of the current, may be felt to contract very markedly, while the intensity is not sufficient to produce the sensation of pain, so frequently experienced in the intensity currents. In fact, faradaic currents of great quantity affect the nerves of sensation only slightly.

That faradaic electricity will ever take the place of the galvanic we do not expect, for the latter has properties which it would be impossible to obtain in the former; yet we know that results can be obtained in the employment of electricity which have not been hitherto fully appreciated.

No. 123 CALUMET AVE.

ARTICLE III.—*Cases from Practice.* By J. W. BROOKS, M.D., Chicago.

CASE 1. Sept. 1st, 1873, was invited at 1:30 o'clock P. M., to visit Mrs. L., a multipara, 24 years of age, under the care of a midwife, at No. —, —— Avenue. Said to have been in labor from twenty to twenty-four hours. On reaching the bedside found a peculiar spasmodic condition of the uterus; pulse at the wrist almost imperceptible; lips blue; incessant jactitation; hurried, grunting respiration; cool sweat over the body; great anxiety.

Administered McMunn's elixir of opium, and sent for professional assistance, to which Dr. McWilliams responded. The system in no way responded to the opiate. The child was forthwith removed with the forceps, and a free flow of uncoagulated blood followed, which did not coagulate afterward. The rupture appeared to be at the lower part of the uterus, near to the vagina. (Could not obtain an autopsy.) The hand passed readily into the abdominal cavity. The uterus was found well contracted below and to the left side. There was no further external hemorrhage. Stimuli were administered without result, the patient continued to sink, and died at 4:10 P. M. the same day. I learned from the attendants that the membranes gave way at 8 A. M. with a snap

and a gush of waters, and that nothing flowed afterward till the child was removed, and that it was at 8 A. M. that the restlessness and painful breathing commenced. I think that the rupture commenced at that hour, and that the blood that passed off was the accumulation of several hours. *Quære:* Is it usual for the blood under like circumstances not to form a coagulum?

I omitted to mention that there was a remarkably distinct varicosity of the veins of the vulva, extending some distance up the vagina.

CASE 2. Sept. 1st, 1873, at 8 A. M., was requested to visit Mr. N., a resident of Forty-ninth street, in haste. On arrival, found an atlo-axoid luxation incomplete, and a partial bilateral dislocation of the fifth cervical vertebra. He is a well developed, muscular man, of about 28 years. His sufferings were intense—perhaps we may say agonizing. He was numb from the axis down; had been very uneasy from the time of the injury, at 6 P. M. the preceding evening, to the then present time, and unable to move. It should have been stated that he was picked up unconscious, and returned only gradually to consciousness. The injuries had occurred on this wise: He was riding with his lady in a buggy, and when about to turn a street corner, the horse moving rapidly, he turned to look behind him, and in the act was tossed from his buggy, alighting on the top of his head apparently, and making a complete somersault. The chin was raised a little, turned to the left, and immovably fixed; the face cool, pale and bluish. He being half recumbent, the writer stood directly behind him, while an assistant placed a hand on each shoulder and there held firmly downwards. I then grasped the base of the skull on either side with a hand and made a counter-extension, and a gentle and forward rotary motion, and the atlo-axoid articulation was restored with a snap, attended with great relief. Still retaining my position, I placed one thumb on the spinous process of the fifth cervical vertebra and the fore and middle finger on the projecting portion of the side of the vertebra; pressing firmly with these, and with the other hand carefully rotating, slightly, and making counter-extension to the best of my ability, while my assistant pressed very firmly down on the shoulders, the vertebra was thus returned to its normal position with an audible click. Sensation and motion

were speedily restored. A napkin wrung from warm water was applied from the head to the first dorsal vertebra for forty-eight hours. September 3d, the patient was convalescing rapidly.

CASE 3. Sept. 26th, 1872, was requested hurriedly to visit F. B., a delicate, pale boy of 8 or 9 years. On arriving, learned that on the previous evening, while playing at somersault in his father's parlor, he had injured his neck. Examination revealed a sub-atlo-axoid luxation. The chin was directed a little upward and to the right; the head was immobile; there was some numbness below the seat of injury, in all of the members of the body; he was exceedingly nervous; there was no intense pain, but, as he expressed it, "it hurt all the time;" with a pale, damp, cool skin. With an assistant to steady and hold down the shoulders, and standing directly behind him (he being half recumbent), with a hand on either side of the base of the cranium, and the forefinger separated from the middle finger so that one forefinger of each hand would come before the articulation, and the middle finger of each hand behind, I proceeded to rotate carefully, and at the same time to make counter-extension; presently an audible click announced the return of the parts to their normal position. Convalescence was soon established.

ARTICLE IV.—*Ante-partum Prolapsus of the Cord.* By J. E. O'BRIEN, M.D., Scranton, Pa.

Cazeaux speaks always of prolapsus of the cord as an incident of labor only; other authorities whom I have been able to consult, give no intimation of its occurrence at any other time. But the following case shows the accident as occurring at the sixth month of gestation.

January 4th, 1873. Mrs. H., six months pregnant, called me to find an umbilical cord appearing externally and strangulated by the os uteri. Her object in calling me was to know if anything could be done to prevent the miscarriage which previous experience had taught her to expect. She had no living children, but stated that a prolapsus of the cord had occurred to her once before, at the sixth month of gestation, and was followed by

abortion. The exciting cause had been a fall, she thought, and, in this second case, exertion in "white-washing."

I could think of no means of restoring the cord, that would offer any hope of saving the child, the means applicable to a case occurring at term seeming to be out of the question, with the os uteri firmly contracted and the fœtus too young to sustain an independent existence. Abortion followed in two days.

My object in publishing this case, is the same as that of the lady in sending for me.

ARTICLE V.—*Spread of the Specific Diseases—Paroxysmal Fevers—Marsh Fever produced by Obstruction of the Outlets of Subsoil Water.*

The following account by Dr. Derby,* of Massachusetts, will be found of interest.

The uneven surface of Massachusetts has allowed great resort to water-power, and thus dams and reservoirs have been formed which obstruct flow, and have raised the water level.

The reservoir, also, which is often constructed to supply water for the wheel, is a receiver of many impurities, and purifies itself little by movement, or if the reservoir is emptied, a foul bottom is exposed to the sun.

Formerly, indigenous intermittents in Massachusetts were very rare, but when they occurred they were often referred to the mill-dams causing obstruction, and producing wet, marshy soil. In 1828 a dam thus constructed on the Housatonic caused such a development of intermittent fever that the people obtained legal authority to remove the dam, on the ground of the injury to the public health. At the present time the exemption from intermittent fever is far less complete than it was formerly. "Twenty-five years ago it was taught in our medical schools," says Dr. Derby, "that intermittent fever was a disease almost unknown in Massachusetts, except when contracted in other places. * * * * The exemption of the people of this State from periodic fever

* "Third Report (1872) of the State Board of Health of Massachusetts." Boston: 1872.

seems to be far less complete at the present time. Intermittents have been observed in Chelsea, and the history of the cases carefully investigated, and their local origin proved, on lands reclaimed from a salt-marsh, and now covered with houses. Cases have been seen during the past year clearly originating in Boston. They have been reported of late years in various parts of the State, along the banks of streams in low lands, and also in the immediate vicinity of tide-water, and occurring in persons who had never lived elsewhere.

"Physicians have observed that in the treatment of typhoid or enteric fever, the number of cases in which quinine is found useful, not simply as a tonic, but as a febrifuge, has become very considerable.

"In parts of Connecticut, intermittent and even remittent fevers are now not only frequent, but severe; and the gradual enlargement of the area of malarious influence, from the latitude of Long Island Sound toward the southern border of Massachusetts, is a fact to which we may well give heed."

The cause of this extension is to a considerable extent fresh-water obstruction, and several examples are given; but there is in addition another form of water obstruction, which, says Dr. Derby, "is full of danger to the public health, and is counterbalanced by no commensurate claims to economic value. If the fresh-water obstructions need to be watched, some of the salt-water obstructions need to be demolished. If the river-dams and reservoirs are liable, when used for the single object of profit, to render public health less secure, the tide-mills in crowded neighborhoods are nuisances which should be abated."

The rise and fall of the tide has been used as a motive power in all convenient situations from the earliest settlement of the country. Of late years tide-mills have not been found profitable, but the dams remain, and in most cases their water is still used. When first formed, there were seldom any houses near them, but now there is a crowded population close to them. In the case of the "Cross-dam" at Boston, about 70 acres were kept filled in 1871 by stagnant salt water, for the sake of the power thus obtained for a grist mill. This affected the health and comfort of at least 200,000 persons. * * * * A case which occurred at Natal, and which was related to me by Dr. Cattell, of the 10th Hussars,

gives another interesting instance of an accidental obstruction acting somewhat in the same way. I give Dr. Cattell's memorandum in his own words:

"Fever of a severe and unusual type suddenly appeared on the coast northward of the Unguini river, and as a vessel had recently put into D'Urban, from Port Louis, disabled with Mauritius fever, the sick crew being landed at the Civil Hospital, a panic induced the Government to send down a Commission of Inquiry.

"Along a line of some five miles, a low hill range encloses a narrow belt of lagoons, themselves separated seaward by a low spit of sand, often in mounds, held together by juniper and iceplant, and pervious below to the water. To the south this range abuts on the Unguini, a large river; here, as it meets the sandy shore, sinking through and becoming shallow, having therefore a variable mouth, which changes after great floods. Six months previously, before the present hot season, an unusual rainfall, over a wide area near its sources, had brought down a large volume of water, destroying the bridge, and carrying trees, Kaffir houses, much soil, and a large mass of canes, refuse, manure, etc., from its banks and the low adjoining plantations.

"Previously opening near the lagoons, the river had now cut southward along the sandy shore and opened 600 yards or more further down, so that the seaward boundary of the lagoons extended right across its former mouth. The flow, instead of being toward the lagoons, was now directly away, and these were therefore not overflowed as deeply as formerly. The entrance to them from the river was found closed almost entirely by masses of vegetable matter, trees, canes, and canefield refuse, matted together to a depth of from four to six feet, lying always in the water, but now entirely submerged. All along the lagoons similar matter had been carried by the flow-water, and left partially submerged.

"Along the seaward face of the ridge, generally high up, houses were dotted, in every one of which scarcely any who remained had escaped the fever, which was most severe above the large mass of decaying matter near the old mouth, which affected every house to the leeward of the lagoons, but extended no further, and did not affect residents on the further (landward) side of the ridge. Adults and children, Kaffirs and Coolies, alike suffered. There were two local predisposing causes in operation, such as swampy

ground and brackish water, which causes, however, had previously been quiescent." * * * "I believe they might all be classed as ague of a severe type and as ordinary remittent." * * * *

"Some months later, fever of a different type appeared, also suddenly, in a small village at an extremity of D'Urban Bay." * * * * "Here, at low tide, the water retreats from 500 to 600 feet, leaving alluvium partly sheltered by mangroves. For some time the night-soil of the neighboring town of D'Urban, collected from boxes, had been carted and deposited here, not very far above the level ground on the slope." * * * "The type was enteric, with delirium, and considerable abdominal irritation, showing marked intermissions, as do most acute cases in this neighborhood, especially fevers." * * * "There seems no doubt that here the fever was due almost entirely to animal poison; that the sewage matter deposited on soil whose natural outfall was interrupted by salt embankments, sufficiently accounted for the outbreak which some supposed arose from effluvium of these novel, unpopular salt-works, or from tidal alluvium, or from mangroves, which had existed before the houses were built, and which lined the shore along the township in the immediate vicinity of streets hitherto without suspicion."

ARTICLE VI. — *Cholera — Latest Discussions in Germany on the Subject.*

The causes of the spread of cholera are of such interest to every one that it seems desirable to briefly notice the latest discussions in Germany on this subject.

The great reputation of Pettenkofer, his acuteness and able statement of his views, have insured his opinions a wide acceptance, and are at the present moment influencing the course of investigation, both in Europe and in India. If, as some suppose, Pettenkofer has been on a wrong track, his influence may unfavorably bias the investigation, and it seems important to exactly define his position and the value of his arguments. He has, in the course of years, changed several of his views, and has been subjected to some sharp criticism in consequence; and lately a very able and

thoughtful attack on his ground-water hypothesis, by Dr. F. Sander,* and to some extent by Kuchenmeister, has appeared.†

Pettenkofer has found it necessary to reply to Sander in a long article in his Journal,‡ entitled, "On the present state of the cholera question." In this he has defined his own views, and has discussed with great ability the general question of the spread of cholera.

A brief notice of these three essays will enable us to analyze and prove what Pettenkofer's opinions are at this moment.

Sander's conclusions are these: he does not deny that in the spread of cholera there is, to use the language of Pettenkofer, "a disposition given by time and place," or, as we should say, by conditions of season and locality.

In fact, this is one of the most obvious points in the spread of cholera; in India, the cholera seasons of special places are well known; and the prevalence of cholera in certain spots, and the exemption of others, have long been observed with the greatest interest.

Sander does not again deny that the condition of the soil may play a part in some instances in preventing or favoring the spread, but he considers such a part as non-essential, so to speak, and that the local favoring conditions, whatever they may be, need not be connected with the soil. Beginning his inquiry with a leaning to Pettenkofer's views on this point, he has gradually found it necessary to diverge from him, and has been obliged to attribute a great importance to infection, by means of the intestinal excreta, and to multiplication of the "cholera ferment" in the bodies of men.

Kuchenmeister has come also to pretty much the same conclusion. He considers cholera without men to be inconceivable; epidemics are produced sometimes by direct infection, more frequently by the aid of so-called "helping causes" in the ground.

As means of this spread, we have, he says, in India as in Europe, traffic and intercourse with cholera-sick men and places, and, before everything, proximity to their clothes, foul linen, house

* "Untersuchengen uber die Cholera in ihren Beziehungen zu Boden und Grundwasser." Von Dr. Fr. Sander. Cologne: 1872.

† "Handbuch der Lehre von der Verbreitung der Cholera." Von Dr. F. Kuchenmeister. Erlangen: 1872.

‡ "Zeitschrift fur Biologie." Band viii, p. 492. 1872.

utensils, and privies. The most probable carriers of the infecting matter are considered by Kuchenmeister to be the cholera dejections, and the failure of the so-named disinfection of the dejections in the ground, or in privies, is no proof against the view. That the cholera moves with the wind, Kuchenmeister considers not only unproved but as improbable, and experience is opposed to this view. Starting then from this point Kuchenmeister considers the "helping causes of place and season" to be air-temperature and rain; especially the permeability of the soil for the air-temperature and air-masses in the superficial and deep strata; and after these he considers that the putrefactive changes in the soil are of importance. As to temperature of soil he considers that it is tolerably certain that cholera will not spread if the temperature of the upper strata of the ground which are in relation to men, sinks under 54.5° Fahrenheit. The ground-water plays a part, he thinks, in the cholera spreading, but not that which Pettenkofer ascribes to it; and other conditions, especially the temperature of the soil, and the amount of water in the upper strata, are of much greater importance than the ground-water. With regard to the spread through drinking-water, this has been as often affirmed as denied in Europe as in India. "The worth of this opinion," says Kuchenmeister," is daily lessened among us."

Such, then, are the opinions of these two writers, which differ only from those received commonly in India and in England in the doubt expressed on the spread by drinking-water; a doubt also shared by Pettenkofer.

As already said, Pettenkofer replies especially to Sander in a long article. He refers to his own changes of opinion, and believes such changes to be inevitable with every one. He rates our knowledge of cholera low, but wishes to define his present views as carefully as he can.

He begins with a reference to the old terms of miasma and contagion, which he uses in the sense that "Contagion" is a specific infection-matter arising within the body of the person, and "Miasma" an infectious matter arising outside the body. He also does not deny that possibly some of these matters may spread in both ways, and if so, the old term, "contagious-miasmatic diseases," would be rightly applied to them, but, as he finally remarks, it must be proved that diseases do actually spread in both ways, and

he evidently holds it to be unlikely. Pettenkofer has thus stated again the old controversial phrases of the contagious and infectious conflicts of former days. He points out that, if there be a "contagious-miasmatic disease" (in the true sense of the word), it must be always possessed of the same properties, and must spread in both ways. We cannot suppose, he considers, that it may now spread entirely miasmatically, and at another time entirely contagiously.

He then observes that cholera, typhoid and yellow fever have many similarities in their spread. They are, he considers, importable, but not contagious diseases, but he refers for this opinion to some very weak evidence respecting yellow fever. Transportality of cholera by men and human intercourse, which is, he says, undoubted, is not to be taken as equivalent with contagious. There are places free from cholera, and which remain free; however frequently Lyons has been invaded by choleraic persons, no epidemic has ever occurred there. He argues this point, and the spread on board ship, at some length, and finally states that in the course of the observations he has made, his opinions have been altered in many ways; at first he stood, like so many others, with a predilection for the contagionist side, but was gradually, by the continued pressure of facts, driven from that position, and now believes that the customary contagious doctrine has been the greatest hindrance in our search after the nature of cholera, since our glances have not fallen on the right point, but in directions where what we seek is not to be found. He concludes "that cholera is carried by traffic, but is not on that account a contagious disease, that the causes of the increase of the cholera infection-matter, are to be sought in the surroundings of men, and not in the men themselves."

Of these surroundings he attaches, he says, an essential part to the soil. * * * * * He goes on emphatically to repeat the opinion he stated at the Cholera Conference at Weimar, in 1867: "We know that cholera is spread by traffic; we know that other additional circumstances are necessary, in order that an epidemic shall arise, and many men fall sick in one place. If only in a single case the participation of the ground is a matter which is indifferent, the same must be allowed in all other cases. I consider at present that those cases which appear as if the ground were unnecessary, are not properly analyzed. If we give up the

influence of the ground in a single case, then such influence is no longer necessary for all other cases."

With regard to the "drink-water hypothesis," Pettenkofer says he has proved that in many and heavy epidemics, the participation of the drinking-water was impossible. As he was driven to seek for other local influences in these cases, so he lost the right (according to his view) to lay more weight on the water hypothesis in those cases in which it was not disproved, than in those in which the influence of the drink-water was shown to be evil. He thus found himself always thrown back on the ground, as the seat of the local condition which determined the epidemic.

In expressing himself thus, Pettenkofer appears to disregard the strong positive evidence which has been accumulated, to show that the drink-water may carry the agent. He can undertake to say, and no doubt rightly, that in some cases the drinking-water was not in fault, but he stretches his inference too far, and nothing appears to justify him in the opinion which he seems to hold so strongly, viz., that there can be only one mode of spread. Pettenkofer then passes on to the consideration of cholera on board ship, which Sander considers as fatal to the ground and ground-water theory. Pettenkofer does not allow this, and enters on a long discussion. His argument appears to be this: in no case is the spread of cholera so infrequent as on shipboard, although the conditions there are more favorable to the spread of a contagious disease than in other cases. The specific cause (*die specifische ursache*) of cholera is from time to time spread by means of human traffic from India, or from other endemic sites. In this spread there is (besides individual disposition,) "a time and place disposition." There are places where cholera, often introduced, never spreads; there are times when in a place which it is known can have epidemics, it does not prevail.

Now, in ships, the cholera is introduced from land, but in by far the greater number of cases of ships at sea, the ship is like one of those places on land which want the local disposition, and which cannot, therefore be attacked. The attacks of cholera on shipboard die out, and generally restrict themselves to persons who, in all probability, have been infected on shore. In cases in which considerable outbreaks have occurred on shipboard, the cases are usually confined to those who have been in connection with some

particular place on shore; it attacks the passengers and not the crew, or one company of soldiers and not another, etc.

And yet he admits that there are some cases of real epidemic outbreaks of cholera on board ship. If we are to be consistent, and not to give up the etiological rule of the identity of the causes of cholera on land and at sea, we ought to ask, it is said, how the conditions of time and place which are necessary on shore happen in these particular cases to appear on board ship? No doubt the hypothesis of contagion would most easily explain these instances, but then by far the greater number of attacks on ship-board are not consistent, and all rational grounds are wanting to connect such epidemic outbreaks with contagion.

If cholera on board one ship has a contagious character, what prevents cholera from being contagious in all ships in which the infectious matter is introduced? * * * * There is something special on board these ships with epidemic outbreaks, which makes the part they play identical with that which the ground plays in epidemic outbreaks on shore. What that is, is quite unknown. We must renounce, with our present small knowledge of cholera, any presumption of being able to explain such occurrences now, but ships offer one of the best means of investigating certain points in the history of cholera.

If we only knew why the cholera infection material is so seldom operative on shipboard, we should be able to apply this fact at once to the case of places on land which enjoy immunity.

Passing on from this point, Pettenkofer refers to another criticism made upon his theory, viz., that he holds the opinion that the "cholera germ" (cholera keim) can increase only in the ground; he has expressly stated the contrary.

If x be taken to mean the "cholera germ," which is brought by human intercourse, and y the favoring local condition which allows it to grow, all he has contended for is, that this condition y is somehow or other furnished by the ground; but x and y may meet either in or out of the ground, either in the body or out of it.

A third reproach which is made—viz., that he has not given accurate and constant signs of a cholera ground, and has not precisely stated the necessary degree of the ground-water, *i. e.*, when the ground is too dry and when too moist to allow an

epidemic of cholera to occur—Pettenkofer admits to be true; he can only say, with Pio Nono, "Non possumus." We cannot precisely state these facts; we all have much to learn and much to forget; but it would be a great error, he thinks, not to discuss things because they cannot be rigidly defined.

He concludes his long and interesting article with a few remarks on the mode of investigating the part which the ground plays, and of the measures which should be adopted to check an outbreak of cholera.

If now I attempt to analyze Pettenkofer's views, I do so more with the view of attempting to define the course which inquiry should take, than with the intention of offering any decided opinion on the question of the necessary participation of the ground.

1. The point which Pettenkofer holds most decidedly, as well as Sander and Kuchenmeister, is that there is a specific cholera-producing substance which is spread only by human intercourse. Although he refers to Bryden's "Monsoon theory," and even uses the term himself, I gather that he does not mean that the cholera poison is carried by the wind, but merely that the monsoon gives favoring conditions, such as rain.

2. He then thinks that this cholera virus or miasm cannot, by itself, produce cholera in any case, but must meet with some unknown local condition or conditions in the ground or out of it, but if out of it, still furnished by the ground. If x represent the unknown cholera miasm, and y the unknown local conditions, then x must meet y to produce the agent which in a susceptible person can cause cholera. The reason which appears to have led Pettenkofer to adopt this opinion, is the fact that cholera sometimes spreads, and sometimes does not spread.

There are some places, with plenty of susceptible people, in apparently very bad sanitary condition, among whom the "cholera germ" is introduced, and yet who remain untouched; in other cases a wide spread epidemic follows. The old explanation of an epidemic constitution is untenable, as the places may be close together, the time and season may be the same, and all conditions apparently equal; yet they are not equal, for in one place, A, the disease spreads, and in the other, B, it does not. To use Pettenkofer's language, the unknown condition y exists in A, but not in B. Impressed by the undoubted fact, Pettenkofer has adopted

the conclusion that *y* is always *necessary*—that it is not simply a favoring condition, but that it is essential to the formation of that poison. * * * * It is not denied by the opponents of Pettenkofer that in a vast number of cases something else is operative than the mere introduction of the "cholera germ"; that some favoring conditions are in action, without which, in most cases, cholera will not widely spread; and that there may sometimes be influences from the ground; but they refuse to admit that Pettenkofer is justified in his absolute assertion of the necessity of ground influence.

3. Having thus, in his own mind, become persuaded that the "cholera germ" will not alone produce cholera, but must have local conditions in order to develop into the actual poison, Pettenkofer's third stage of argument is to show that these local conditions are connected with the ground. He is led to the ground by two roads: first, by exclusion, as he finds no other constant condition; second, by examination of the ground, which shows, he believes, that all places favorable to the spread of cholera exhibit certain characteristics of aggregation, moisture, and rise and fall of the ground, or subsoil water.

With regard to the first of these arguments, it is open to anybody to hold that Pettenkofer has too much neglected the introduction of cholera by water, food, and perhaps air; and, as respects the second argument, it cannot be doubted that at present the evidence which Pettenkofer, with such immense industry, has been able to array falls far short of demonstration; and that the decision whether the condition of the ground is really a matter of moment in the spread of cholera, and, if so, what is the exact condition which is thus favorable, are points which have still to be decided by the evidence alone admissible in scientific inquiries, viz., a sufficient number of well authenticated facts.

To me it certainly appears, at the present moment, that Pettenkofer's ground and ground-water theory is less probable than it appeared to be some years back. That the ground has an influence is highly probable, and is in fact a very old opinion; but when it is seen how very indefinite even Pettenkofer's own evidence is, and how uncertain are some of the cases he relies upon, I think it must be admitted that the enigmatical spread of cholera has not

been cleared up by him. Kuchenmeister's views, on the other hand, seem more in accordance with facts.

If, without presumption, I may venture to criticise Pettenkofer's mode of looking at this subject, I should say he has allowed himself to be too much impressed by the instances in which cholera does not spread after introduction. In attempting to explain, instead of simply admitting that we cannot yet explain such cases, he has passed beyond the boundary of ascertained facts, and in so doing appears to me to have lost his hold on what are really truths.

The view which looks on the cholera-poisoning as being carried by men, and then increasing and spreading more or less in various ways, by water, air, or food, according as it meets with favoring conditions, is more in accordance with facts than the view which assumes that two unknown quantities must be brought together in order to evolve a third.

Report on Hygiene for the year 1872, by Dr. E. A. Parkes, in British Army Medical Report for 1871. London, April, 1873.

ARTICLE VII.—*Translations and Extracts from Foreign Journals.* By Prof. J. H. ETHERIDGE, M.D., of Rush Medical College, Chicago.

The following article is taken from the *Gazette Hebdomadaire de Med. et de Chir.*, (Paris), 26th Sept., 1873.

Decortication (Barking) of the Nose, in Cases of Elephantiasis of that Organ. M. A. PONCET, Interne, Hotel Dieu de Lyon. Service of M. Ollier.

The skin and subcutaneous cellular tissues of the nose frequently become the seat of hypertrophic growths, bearing with them most disgraceful deformities, instances of which every one has seen. It is, indeed, certain noses in luxuriant vegetation which command attention by their inordinate development; they present, here and there, protuberances and depressions, accompanied by a purple or velvet tint, bordering on (wine) redness. The hypertrophy has a slow growth, but it increases every day; it is principally seen in drinkers. After a copious repast, with numerous libations,

the face is animated; the skin of the face, and especially of the nose and checks, becomes red; the circulation there seems more active; then, after a few hours the color becomes normal. With some drinkers the same cause will produce the same effect, *congestion*, which, transient at first, eventually becomes continuous; it produces a genuine dilatation of the superficial vessels.

The skin and the subcutaneous tissue then begin to thicken; the sebacious follicles, in great numbers in this region, become indurated, inflame, and their inflammation works disorder in the nutrition of these tissues, a sort of chronic inflammation eventuating in elephantiasis of the nose, (resulting.)

The hypertrophy, which by preference occupies the movable part of the organ, does not always present the same characteristics: at one time it is uniform, that is to say, all points rise equally; at another time, it rises unequally at some points and produces tumors, bumps (bosselures—nodules?) of various forms.

These latter become, by their dimensions, sources of functional troubles, that is, they constantly hinder, in a variable degree, respiration, articulation, and the prehension of food; by their volume they hinder binocular vision, and thus induce strabismus. Add to the deformity these troubles, and an offensive discharge, and it is easy to understand the sort of deformity the surgeon is occupied with and attempts to cure.

Many of the cases eventuating in elephantiasis of the nose are greeted with a smile, when they come to demand a cure for this nasal hypertrophy, and one is content to recommend no more drinking (for the future.) The advice is assuredly very good, it is of utility for the future, but for the present moment it does not benefit the deformity.

It is in cases such as this, that M. Ollier practices *decortication* of the nose. This expression, happily chosen for the surgeon, answers, as we shall see, the account (description) of the operation. The patient being anæsthetized, he incises the skin and the thickened tissues on the dorsum of the nose, then, seizing one of the borders of the wound with forceps, he proceeds to their dissection, being very careful not to touch the cartilages and to preserve intact the fibrous tissues which unite them. He also completely preserves the fibro-cartilaginous framework, in order not to compromise the form and functions of the nose—and, if we may

be permitted the comparison, he works upon (manipulates) this organ with bistoury and forceps as one would with the fingers remove the shell from a fresh walnut without breaking the covering —or would remove the bark of a branch without injuring the wood.

In the different decortications, made by M. Ollier, the operation offers no other peculiarity than a hemorrhage, resulting from the great vascularity of the organ removed. The use of sponges wet in ice-water, in staunching hemorrhage, allows the completion of the operation without a single risk.

With the finger introduced into the nostrils from time to time, as recommended by M. Ollier, one can easily be cognizant of the thickness of the tissues that he replaces, and of the integrity of the fibro-cartilaginous support, which above all things must be preserved.

The decortication finished, compresses, wet with ice-water, are held for a few moments against the bleeding surfaces; then the dressing is attended to. M. Ollier, in order to control all hemorrhage, applies directly to the wound, some picked up charpie saturated with a dilute solution of perchloride of iron, and places compresses over it, holding it all with a broad band. This first dressing should remain on many days; the charpie should be allowed to separate and fall off of itself, being raised up by suppuration; later, when there is no longer fear of hemorrhage, a simple dressing suffices. A hemorrhage may occur many days after the operation and be abundant enough to put the patient's life in danger, if it be not quickly checked. It is a fact, of the modifications that are observed in the elasticity and calibre of vessels of hypertrophied organs, that after a section their walls do not collapse as before (comme auparavant); they remain patulous, comparable in a measure to the supra hepatic (sus-hepatiques) veins after a section of the liver; furthermore, formed at the expense of tissue, rich in vessels, the proud flesh is itself very vascular, and, until cicatrization is complete, the surgeon should be on his guard against hemorrhage.

Cicatrization commences from the edges of the skin of the dorsum of the lobule of the nose, as well as from the skin of the nostrils; at the end of two or three months it is completed.

The writer then delineates one "observation" at length. The

patient, aged 55 years, was a heavy drinker, taking three or four bottles of wine with his dinner; his enormous nose was the butt of ridicule, and in those regions he was called the "Father of France" on account of it. "Upon entering the Dieu Hospital, his face presented, in front and on his cheeks, voluminous buttons of acne. The skin of these regions, thickened, was of a violet red color, but the nose, first of all, captivated attention. Comparable to a potato, it was divided into three portions, a middle and two lateral. The skin of a lively red, of mammillated appearance, furrowed (marked) by bluish vesicles, was studded with large buttons of acne. The left part had the form and volume of a chestnut; attached to the middle part, it was movable, and the patient called it *the nut*. The right part was a little less voluminous, but possessed the same characteristics.

"The patient being chloroformed and kept in the upright position, in a high chair, the head turned back against the chest of an assistant, M. Ollier performed decortication. He incised the skin upon the median line, the incision extending from the lobule to the anterior border of the (proper) bone of the nose; he seized the cutaneous flap with the forceps and dissected out the fleshy masses as far as the sound skin. Their weight was forty grammes. His principal care during the operation was to not touch the different cartilages which give to the movable part of the nose its form and suppleness."

Repeated hemorrhages annoyed the surgeons, during the process of healing of this patient's nose, and a fatal result was, with great care, evaded. Eventually, recovery greeted the efforts made to cure.

"The nose now has a normal shape, its volume is the same as that of an ordinary nose; the tissue of the cicatrix is less supple than the adjoining skin, leading one to suppose that an operation had been performed."

—

SKILL.

The sagacity and accuracy of diagnosis, which the French physicians exhibit, are greatly to be admired. The Paris correspondent of the *London Times and Gazette*, writing under Sept. 22nd, gives the following instance:

"A woman aged about 40 years was suffering from facial hemi-

plegia on the left side, accompanied by amaurosis of the right eye. The patient was subject to epileptic fits and the paralytic symptoms which first affected the left side were becoming manifest on the right side of the face when the patient was carried off by cholera, which she caught in the ward. During her lifetime, Dr. Ball (the attending physician) had diagnosed a tumor at the base of the brain over the petrous portion of the right temporal bone and compressing the nerves that pass over and through it. The death of the patient offered an opportunity for verifying the diagnosis. But this was not the only point of interest in the case, for, during the life of the patient, it was not sufficient to diagnose a tumor in the brain, but what the nature of that tumor was, and, in an able lecture by Dr. Ball on the subject, he referred to the almost insurmountable difficulties that beset the question. One of the means employed for arriving at anything like a correct diagnosis consists in the use of therapeutic agents. For instance, where syphilis is suspected, as it was in the case under notice, notwithstanding the protestations of the patient to the contrary, the usual anti-syphilitic treatment should be adopted. Accordingly Gibert's syrup (mercury and iodide of potassium) was given, and was followed by marked and rapid improvement in the state of the patient. But what added to the difficulty of the diagnosis was, the patient had no marks of syphilis on her body, and even at the autopsy Dr. Ball felt some hesitation in pronouncing the tumor to be of syphilitic origin, so much did it resemble in size and consistence a glioma; but a small spot of disease on the internal surface of one of the parietal bones removed all doubt in the matter."

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OZONE AND CHOLERA.

The *Berlin Klinische Wochenschrift*, No. 34, contains an article from Prof. von Pettenkofer, prompted by the recent outbreak of cholera in Europe, the last season. He shows how little is known of the connection between epidemic visitations and deficiencies of ozone in the air at such times. Many hold the position now, that deficiency of ozone is one of the first prerequisites to an epidemic outbreak. The learned Professor avers that we are not in possession of enough facts to settle this question, as all methods heretofore employed do not estimate accurately the amount of

ozone contained in the atmosphere. Instruments used are ozonoscopes instead of ozonometers—they tell the presence but not the amount of ozone. The principal defect in observations made is, that no account has been made of the amount of air which in a given time comes in contact with the ozone papers. The Professor induced Dr. Wolfhuegel to make observations with the iodized paper in the open air and within doors. The result is very instructive. One thousand litres of air, out doors, constantly induced obvious reaction, while the air of the different rooms of the physiological laboratory of Munich (large—and quite uninhabited) did not induce the least reaction, even when 12,000 or 15,000 litres of air were brought in contact with the instrument. This fact is the more remarkable, as it is well known that air in rooms, although doors and windows are closed, is continually changing, if even only in a slight degree. "As we, therefore, live in our dwellings for the most part without ozone in the air, the smaller or greater quantity in the open air cannot exert any great direct influence on our well being." He does not, however, assert that the amount of ozone in the free atmosphere may not play an important part in the economy of nature; but we sadly need some method of showing with exactitude the variations in this amount.

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TACTUS ERUDITUS.

L' Institut for Sept. 17, 1873, contains the following, concerning the normal pulse, by Professor Bouillard, communicated at the Academy of Sciences:

"It is possible to distinguish four in place of two periods in the normal pulse, *i. e.*, a first pulsation, separated by a period of rest from a second pulsation, much more feeble than the first, and itself followed by a period of rest. The observation must be made on a person with a slow pulse of not more than forty, in order to become convinced of the truth of this statement. M. Bouley observed that while his colleague was making his statements he tried in vain to get this double pulsation on himself. M. Bouillard replied, that he could well believe this, for during thirty years he had never suspected the existence of this double pulsation, which can only be easily perceived in persons with slow pulse."

The following articles are reported in the *Gazette Hebdomadaire*, Oct. 3rd, 1873. They are extracts of papers read before the "Forty-Fifth Congress of Naturalists and Physicians of Germany, at Leipzig, for the year 1872."

Carbonate of Ammonia and Uræmic Poison. By PROFESSOR ROSENSTEIN.

[Condensed from a lengthy paper. The main features are old—one or two, however, have never before appeared in print. ED.]

"Carbonate of ammonia introduced into the system, produces the complex phenomena which are comparable to those of epilepsy or to certain uræmic accidents.

"The convulsions which this poison provokes are of cerebral origin, since they are not produced after separation of the cord from the brain; they are probably the direct result of the action of carbonate of ammonia upon the same elements of the encephalic centres, and not an excitation, transmitted by the great sympathetic or by the vagus, and reflected under the form of a convulsion.

"Morphine, chloroform, chloral, are without any action upon the progress of the poison.

"Unstriped muscles escape the convulsive action. Abortion has never been the consequence of a parallel intoxication in animals.

"Carbonate of ammonia is eliminated by the kidneys, and its action is very ephemeral and fugitive when these latter are intact. A small quantity is also eliminated from the lungs. According to Prof. Rosenstein the essential difference of action of carbonate ammonia and uræmic poison rests wholly in this fact: the former provokes only epileptiform phenomena, while the second may produce various accidents, coma, convulsions, delirium. In the cases where the uræmic poison produces epileptic attacks, or where one encounters carbonate ammonia in the blood, he should not accuse the latter, because its presence one is not always able to find in parallel cases, and because the quantity found in the blood of animals is by no means in proportion to the intensity of the epileptic phenomena.

"Finally, Prof. Rosenstein added that the accidents following vesical and prostatic affections and called *ammoniemia*, should be clearly separated from carbonate ammonia poisoning. Epileptic

symptoms characteristic of the latter intoxication are absolutely wanting in *ammoniemia*."

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BROMINE IN CROUP.

"Dr. Schuetz, of Prague, spoke of the use of bromine in croup. He has obtained, he said, excellent results by inhalations of this metalloide; he obtained uniform success with the following: 50 centigrammes of purified bromine, 50 centigrammes of bromide of potassium, in 90 grammes of water. Dr. Goltwald confirmed the truth of these assertions, and asserted that the diphtheritic (faucal) membranes lose, under the influence of this precious and novel agent, their consistence, and can be removed very easily. In support of the observations of these two authors, we may say that within the last year, during our residence in the Children's Hospital, we placed some diphtheritic membranes in a concentrated solution of bromine, and to our great surprise, we saw them dissolve in less than ten minutes. Their solubility is less rapid in the presence of bromide of potassium. They do not entirely disappear in the latter and bromine, sooner than an hour."

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PNEUMONIA.

"Dr. Raczorowsky read a paper on the treatment of *acute uncomplicated pneumonia*, founded on pathological grounds, new, and otherwise sound. He considers pneumonia as an infectious disease, due to the introduction of a vegetable parasite into the larynx. He cites cases of epidemic pneumonias, and endeavors to prove that the disease commences in the larynx and thence extends to the bronchi along the mucous passages. The therapeutical indications involve the four following points: 1st, To expel the parasites, the originators of the disease, by the aid of vomiting, especially by the aid of tartar emetic. 2nd, To combat or moderate the local irritation. (This second indication is accomplished, according to his view, effectually, by means of morphine hypodermics, renewed every six or eight hours; this therapeutic measure, in calming distress, fulfills equally well the 3rd indication.) 3rd, To combat reflex phenomena. Lastly, tonics and appropriate regimen (wine, milk and soup) answer the fourth indication, according to the author—sustain the patient's strength."

Selections.

Notes on the Pneumogastric. By J. F. ALLEYNE ADAMS, M.D., Pittsfield. Read before the Massachusetts Medical Society, June 3, 1873.

[Continued from page 627.]

Influence of the Pneumogastric upon the Stomach.—As early as 1801, Bichat observed that irritation of the pneumogastrics produced contraction of the muscular coat of the stomach. This fact has been confirmed by Tiedemann, Gmelin, and more recently by Longet. The last named author has likewise observed that these contractions are very marked during stomach digestion, but are wanting when the stomach is empty. He has also found that irritation of the splanchnic nerves, while it produces movements in the intestines, does not affect the stomach. When the pneumogastrics are irritated, the contractions of the stomach are tardy, resembling the action of the sympathetic nerves upon unstriped muscular tissue. From these facts, Longet concludes that the motor nerve-filaments of the stomach, although contained in the pneumogastrics, are derived by anastomosis from the sympathetic system. We have already seen that the pneumogastrics receive, in the neck, a large supply of sympathetic fibres, from the cervical ganglia.

The effects of *section* of the pneumogastrics upon the stomach have been clearly demonstrated by Bernard. He found that upon division of these nerves, the contractions of the muscular walls instantly ceased, the mucous membrane lost its turgescence and became pale, the secretion of gastric juice was arrested, and the sensibility of the organ was abolished. Schiff, however, has found that the movements of the stomach, although immensely diminished in activity, are not entirely abolished, for substances may still be very slowly passed to the pylorus. These movements he attributes to local irritation of the intramuscular terminal nervous filaments. It has been asserted by Tiedemann and Gmelin, that digestion, arrested by section of the pneumogastrics, may be, to a certain extent, re-established by galvanization of the peripheral extremities of the divided nerves.

Section of the pneumogastrics effectually prevents the action of emetics and cathartics. This fact has been established, and its causes most thoroughly investigated, by Prof. Horatio C. Wood, Jr., of Philadelphia, in a most elaborate and conclusive series of experiments.* These were fifty-one in number, upon dogs, cats

* Horatio C. Wood, Jr., "On the Influence of Section of the Cervical Pneumogastrics upon the Action of Emetics and Cathartics." *American Jour. of Medical Sciences.* Vol. ix. 1870.

and rabbits, most of them being vivisections; and the results may be concisely stated as follows:

1. After section of the pneumogastrics, the largest doses of such emetics and cathartics as arsenic, tartar emetic, veratria, croton oil, gamboge and calomel, with rare exceptions, failed to produce vomiting or purging.
2. In these cases, there was no secretion of gastric or intestinal mucus, whose production in large quantities is the usual result of these drugs, and is essential to their action.
3. These results are not due to non-absorption of the medicines, for these and other poisons produce death quite as speedily as when the nerves are not divided.
4. The absence of purging cannot be explained by failure of muscular action, for the peristaltic action of the bowels continues after section of the pneumogastrics.
5. One probable explanation of this phenomenon lies in the accumulation of carbonic acid in the blood; for animals, hypodermically injected with veratria, but with nerves intact, immersed in an atmosphere of carbonic acid, died without vomiting or purging. This cannot be the sole cause, however, for enough carbonization of the blood is required to produce insensibility, while, after section of the nerves, vomiting and purging are prevented, long before this stage is reached.
6. A second cause is probably the interference with the circulation of the lungs backing up the blood in the pulmonary artery, consequently in the right heart, and finally in the portal circulation, arresting the action of the mucous glands.
7. A third cause is perhaps shock.
8. The opposite results obtained by Brodie and Reed may be explained by the occasional failure of section of these nerves to affect the pulmonary circulation.

Dr. Wood, therefore, attributes the stoppage of vomiting and purging by section of the pneumogastrics entirely to arrest of the secretory function of that nerve, but seems to leave out of the question the reflex function of the medulla oblongata, by which gastric irritation is transmitted from the pneumogastric to the phrenic nerve, and which doubtless contributes to emesis, in those cases where the emetic is given by the stomach. In these cases, the irritation of the emetic, transmitted to the medulla by the centripetal fibres of the vagus, excites simultaneously the secretory filaments of that nerve, filling the stomach with mucus, and the excito-motor fibres of the phrenic, causing spasmodic contraction of the diaphragm. In cases of cerebral vomiting, the emetic influence seems to be transmitted, at first, entirely through the phrenic, hypersecretion not commencing until the stomach is emptied of its alimentary contents; and, in the case of some of the most prompt emetics, such as sulphate of zinc and turpeth

mineral, the reflex action upon the phrenic doubtless precedes that upon the secretory filaments of the pneumogastric.

In this connection, it will be interesting to consider the relation of the pneumogastric to the etiology of migraine or sick-headache, especially since the subject has been so clearly and beautifully brought to the notice of the profession by Dr. Anstie in his work on neuralgia, and also in recent numbers of the *Practitioner*.* Concerning the nature of this distressing and obstinate affection, the most diverse opinions have been and are still held. Of recent writers, we find Du Bois Reymond maintaining that it is due to a tetanic condition of the vaso-motor nerves of the affected side of the head, the pain being analogous to that felt during tetanic contraction of voluntary muscles, or the unstriped muscles of the uterus, intestines, etc. Moellendorf, on the other hand, thinks that hemicrania is based on the appearance of a paralytic condition of the vaso-motor nerves controlling the carotid artery of one side, which causes relaxation and distension of the arteries of the brain. Dr. Anstie differs from both these writers in calling migraine a trigeminal neuralgia, a view which has, of late years, been pretty generally held by the profession in England. There is one essential point, however, in which Dr. Anstie takes an independent position, and that is, in locating the primary lesion in the medulla oblongata, instead of the chylo-poietic viscera, as is more commonly believed. Migrainous pain, he contends, means an atrophic molecular irritation in the trigeminus root, and migrainous vomiting means a similar process in the vagus root. That is to say, an irritation in the floor of the fourth ventricle, being propagated in one direction by the trigeminus, gives rise to pain, and in another direction by the vagus, upsets the stomach. He admits the frequency of simple dyspeptic headaches, with vomiting and a foul tongue; but a true migraine he describes as a trigeminal neuralgia, complicated with vomiting, though the tongue is clean, occurring at regular intervals, induced by over-fatigue, and not by over-eating, beginning in early life in persons whose family history shows nervous disease, and passing off in middle life, or merging into some other form of nervous affection, as epilepsy, asthma, angina pectoris, or persistent facial neuralgia. In accordance with this view, his treatment is strongly tonic; fasting is discountenanced, and the patients are put upon an abundant diet, with cod-liver oil. Drastic cathartics are considered pernicious, as weakening the digestive power, and reducing the general strength. The indications during an attack, he maintains, are entirely for the relief of pain and production of sleep. For this purpose, he relies chiefly upon caffeine, given by the mouth if it can be borne, otherwise

* F. E. Anstie. Neuralgia and its Counterfeits. London: 1871.
Ibid. A Clinical Lecture on Migraine. *Practitioner*, November and December, 1872.

hypodermically. If this fail, he resorts to the hypodermic use of morphia. Dr. Allbutt* replies to Dr. Anstie, contending that gastro-hepatic disturbance plays the most important part in the production of this affection; but the difference between these two gentlemen seems to be chiefly one of classification, for the cases which Allbutt considers typical are not admitted by Anstie to be true migraine. In this country, I am sure but a small minority of the sick-headaches can be classed under Anstie's definition of migraine, for the most frequent cases appear to be such as Chambers† so graphically describes, and which are dependent upon the centripetal rather than the centrifugal function of the pneumogastric.

The researches of Dr. Waller, of Geneva,‡ upon the effects of compression of the cervical pneumogastrics, for the relief of various nervous affections, have been reserved for the close of this paper, as they bear upon all three of its divisions. Although the cases reported are few, they possess a strong interest, both in reference to the importance of the results and the physiological mechanism whereby these results are obtained. He reports five cases, illustrating the effects of pressure upon persons in health, and four cases in which it was applied as a therapeutic agent. The pressure is applied with the thumb, over the carotid artery on one side, usually a little below the angle of the jaw, the thumb being moved until a sensitive spot is found, which he considers indicative of the presence of the vagus. It will be remembered that the nerve lies in the posterior groove between the carotid artery and the internal jugular vein. The symptoms produced in his own case are thus described: "A moderate pressure soon occasions a deep-seated sensation, of a peculiar benumbing character, in the head, which scarcely amounts to pain." Then follows "a sense of languor and of fainting, as if 'going off,' which is so manifest that, if the head and body be not supported, and if pressure on the nerve be continued, complete syncope ensues. Simultaneously, other symptoms of a respiratory, cardiac and gastric nature make their appearance. The respiration, at first arrested for a few moments, becomes heaving and retarded; the heart's action, depressed in force, is disturbed and irregular, as may be felt by the pulsation of the carotid, under the finger. The gastric symptoms are marked uneasiness over the stomach, sometimes amounting to nausea and even vomiting."

In the other cases, the effects were similar, but the heart's action was reduced in frequency as well as in force. In two of them, the

* Clifford Allbutt on Migraine. *Practitioner*, January, 1873.

† On the Indigestions. 1870.

‡ Augustus Waller. On the Effects of Compression of the Vagus Nerve, in the Cure or Relief of Various Nervous Affections. *Practitioner*, April, 1870.

cheek and ear of the side upon which pressure was made were observed to be paler and of lower temperature than those of the opposite side; and in one, there was slight protrusion of the eye-ball.

These symptoms Waller attributes to an irritation by pressure of the trunk of the pneumogastric and the cervical cord of the sympathetic, which lies beneath it, so that it is impossible to make firm pressure upon the one without also pressing upon the other. By comparing these symptoms with the effects of galvanization of these nerves, we find them to be identical. The retardation of the heart's pulsations, and the slow, heaving respiration, result from irritation of the inhibitory nerve-fibres of those organs in the vagus; the diminution of arterial pressure is due to irritation of the depressor nerve, and the nausea may arise from irritation of gastric nerve-fibres, or may be wholly or in part dependent upon the faintness. The pallor and reduction of temperature of the cheek and ear, and protrusion of the eye-ball, are symptoms referable to irritation of the sympathetic, being among the characteristic symptoms of Basedow's disease, an affection whose primary lesion is in the cervical sympathetic ganglia, or the adjacent cilio-spinal centre of the spinal cord. The peculiar benumbing sensation in the head is probably caused by cerebral anæmia, from irritation of vaso-motor nerves. With regard to the faintness and nausea, it is difficult to say which nerve contributes the most to them, for they may be induced by galvanization of either the vagus or sympathetic. Waller lays the most stress upon the irritation of the vagus; but, as it is impossible to press upon this, without also pressing the sympathetic cord, the two sets of symptoms are necessarily simultaneous and liable to confusion.

Previous writers, who had made use of pressure upon the neck, supposed its effects to be due to obstruction of the arterial or venous circulation, and Dr. Waller himself shared this belief until 1861, when he became convinced that these phenomena are of purely nervous origin. Dr. Parry, of Bath, was the first to apply practically, in the early part of this century, what he termed compression of the carotids, for inducing sleep, and for the immediate relief of attacks of hysteria and epilepsy; but long before his day, Aristotle had written "that if the veins of the neck become compressed exteriorly, one sees a man shut his eyes and fall down senseless, as if he were strangled, although he is not so." But Waller shows that compression of the carotid arteries will not induce the symptoms described, adducing the fact that, in animals, both carotids may be tied, without producing any disturbance of the heart's action, or of innervation. In man, too, the ligation of one of the carotids gives rise, in the great majority of cases, to no immediate symptoms of a marked character, the secondary symptoms which occasionally supervene, such as convulsions, coma, collapse, etc., being of a totally different nature, and generally

attributable to lesions of the brain. In those rare cases in which impaired eyesight and syncope have immediately followed the ligation of the artery, it is likely that the vagus or sympathetic nerves, or both, have been included in the ligature; for, when such is the case in animals, the symptoms are found to be similar. Ligation of the internal jugular vein has also been frequently performed, without any peculiar symptoms resulting, although a case is within my knowledge where ligature of one of these veins, for hemorrhage, was followed by coma of three days' duration. Even in this case, it is not unlikely that the nerves were included in the ligature. Simultaneous compression of both internal jugulars would undoubtedly produce some cerebral congestion, whose symptoms would, however, differ essentially from those described by Waller; but it is probable, from the manner in which the pressure is made by him, that the circulation in these veins is but slightly, if at all, impeded. Taking these circumstances in connection with the known effects of irritation of the vagus and sympathetic nerves, we may safely conclude that Waller's views are sound, and a valuable addition to medical science.

The cases which he reports, in which a therapeutic application was made of compression of the pneumogastric, are not sufficiently numerous for generalization, but are very striking and suggestive. In one of them, violent nervous disturbance of the heart, with hysterical symptoms, came on in a lady suffering from an attack of acute rheumatism. Compression was made, first of one vagus, and afterwards of both. In a few minutes, the agitation had subsided, the heart's action became quieter and more regular, and finally, all the nervous symptoms subsided. A few minutes afterward she sank into a steady sleep, and, on awakening, was perfectly quiet, and the cardiac symptoms never re-appeared.

Another case was that of a lady, who, in consequence of a fall on the previous day, had severe neuralgia of the head and back, hyperæsthesia of the ulnar and median nerves, much mental excitement, a small pulse, at eighty, and frequent fits of obstinate vomiting. Pressure was applied to the left vagus. The result was perfect quietude, with laborious breathing, for about ten minutes; pulse weak and irregular. After removing the pressure, the pulse fell to seventy, and became full and regular, the patient lying quiet, and apparently unconscious, for upwards of ten minutes more. When she came to her senses, the vomiting had ceased, and did not return. The pain and excitability had left. The fullness of the pulse remained for some hours.

A third case was that of a lady with an irritable stomach, the sequela of gastritis, who had frequent attacks of spasmodic vomiting. One of these attacks was quieted by Dr. Waller, by pressure on one of the vagi, and subsequently the patient acquired the habit of making the pressure herself, when nausea came on,

and always with the effect of quieting the stomach and preventing emesis.

The fourth and last case was that of a young lady who had suffered for several months from a severe hemicrania, recurring periodically, every day. In this case, Dr. Waller resolved to make use of pneumogastric compression as a "perturbating" agent, as he expresses it, and, to that end, while the patient was in the sitting posture, made strong compression of both vagi. Syncope occurred immediately, and she remained quiet and unconscious for two hours, although the respiration and heart's action were regular. The result was, that she had had, in the two years intervening between this treatment and the report of the case, not the slightest return of the hemicrania.

We ought not to leave Waller's pressure method without referring to Rothroch's cases of the therapeutic application of *ice* to the neck, in the region of the pneumogastric.* This was done in cases of hysterical delirium, one being idiopathic, and the other following the use of an anæsthetic; and also in a case of suspended respiration, in etherization.

In all the cases, the application was immediately followed by a deep, heaving respiration, and restoration to consciousness, with muscular relaxation. There was no faintness, however, as is the case when pressure is made; and no mention is made of any retarding of the heart's action. It is difficult to tell in what way the ice acted, in these cases. Dr. Rothroch supposes that it, in some way, supplied the *besoin de respirer*, and that shock, also, was a not unimportant factor. Shock, however, was not the sole agency, for when the ice was applied to the *head*, no effect was produced. This mode of treatment is so easily applied, that it is to be hoped it may be given a general trial.

In closing this paper, it need only be said, that the fear of adding unduly to its length has necessitated the omission of much that properly belongs to the subject, such as the relations of the pneumogastric to the larynx and to the liver, and the various forms of pneumogastric neuralgia. The object of the essay will have been accomplished, if it has succeeded in reviewing, with clearness and accuracy, the most recent investigations concerning some of the more obscure functions of the vagus; and, while showing what brilliant results have already been accomplished, indicating the yet unopened mines of wealth that remain for the reward of future explorations.—*Boston Med. and Surg. Journal.*

* J. T. Rothroch. Ice to the Neck in Hysteria, and also in Suspended Respiration. *Philadelphia Medical Times*, Vol. iii, No. 53, p. 67.

Prof. Meynert's Method of Examining the Brain, etc. By JAMES J. PUTNAM, M.D.

In an interesting paper by Dr. Burt G. Wilder, entitled Cynophrenology, which appeared in the Journal of January 23, ult., allusion is made to the insufficiency of our present methods of gauging the relative excellence of the different mammal brains.

It is remarked with truth that neither the absolute size of the brain, nor its relative size as compared with the whole animal, nor the number or complexity of its fissures, satisfactorily indicates its quality. The first test would place the brain of the elephant and the whale too high in the scale, the second, too low.

There is, however, one test, first suggested, as I believe, by Prof. Meynert, of Vienna, which seems to be a satisfactory and practical one. That is, stated briefly, the relation in point of size or weight between the corp. quadrigem. and the cerebral lobes; or, in other words, the relation in point of development between the so-called "posterior division"* of the caudex cerebri (Hirnstamm) with its ganglia of origin, and the "anterior division" with its ganglia, *i. e.*, between the tegmentum cruris cerebri with the thalamus opticus and the corp. quadrigem., and the pes (or basis) cruris cerebri with the corpus striatum and nucleus lenticularis.

This latter tract (the pes cruris) is concerned according to Prof. Meynert, almost exclusively in the transmission of voluntary impulses to the muscles, and stands, therefore, in a fixed relation to the cerebral lobes, in which the voluntary impulses are originated, throughout the entire mammal series. The development of these two structures, viz., pes cruris and cerebral lobes, culminates in the brain of the adult man, whereas the tegmentum cruris with the corp. quad., etc., find their greatest development in the brains of the lower mammals, as the following table will indicate:

	MAN. Per cent.	APE. Per cent.	DEER. Per cent.
Height of basis cruris cer. compared with that of tegmentum	1.1	1.3	1.5
Weight of cerebral lobes compared with that of entire brain	78	70.8	62
Weight of corpus striatum, with the nucleus lenticularis, compared with that of the entire caudex cerebri	50	40	33.3
Weight of thalamus opticus compared with that of the entire caudex cerebri	19	22.9	30

* Compare: The Anatomy of the Mammal Brain, by Theodor Meynert, Stricker's Manual of Histology, American edition; also, an analysis of the same in Brown-Sequard's Archives of Scientific and Practical Medicine for February, 1873; also, Ueber die Bedeutung der Zweifachen Ruckenmarksursprunges vom Grosshirn. Sitzungsberichte der Koniglichen Academie der Wissenschaften. Bd. lxi., H. iii.

A table is annexed to the paper "Ueber die Bedeutung des Zweifachen Ursprunges des Ruckenmarkes, etc.," showing that, among the large number of mammals examined with reference to that point, in none did the development of the pes cruris equal that to which the corresponding part of the human brain attains.

This seems a not unsuitable place for recording Prof. Meynert's manner of examining the brain in the autopsy room, which is of value because it permits, more than any other, of the exact localization of defined lesions, without at the same time so mutilating the parts as to make them unfit for subsequent microscopic or other examination. The method aims, in the first instance, at the enucleation of the cerebral ganglia from their bed in the white substance of the lobes, so that all the surfaces of these parts may be freely examined.

Each cerebral hemisphere, according to Prof. Meynert, presents at both surfaces the form of an arch, of which one branch is represented by the frontal extremity, the other by the temporal extremity of the hemisphere.

The lumen of the arch of the inner surface is the lateral ventricle, of that of the outer surface the fissure of Sylvius. At the bottom of the fissure of Sylvius lies the island of Reil; directly beneath, and scarcely separated from this, is the surface of the nucleus lenticularis,* a cone-shaped ganglion which lies crosswise in the axis of the arch. Surrounding this, in a curve concentric with that of the main arch, is the corpus striatum (nucleus caudatus), whose large anterior extremity (caput) reaches forward and downward, buried in the frontal lobe, to the anterior perforated space, where it is nearly met by the dwindling posterior extremity (cauda) which curves backward and downward along the lateral ventricle, in which it is everywhere visible, nearly to the extremity of the temporal lobe.

The proposed dissection throws these two false arches into one true arch by cutting out this ganglionic mass which fills its lumen.

The knife has for its guide, in the fissure of Sylvius, the limits of the island of Reil; in the lateral ventricle, the border of the gray surface of the corpus striatum which runs along its inner angle. The principal details of the operation are as follows:†

The brain, removed in the usual way, is laid down upon its convexity, and, the membranes having been torn away as far as is requisite, the temporal lobe on both sides is dissected upwards by a series of cuts opening into the lateral ventricle on one hand, and the fissure of Sylvius on the other, and made in accordance with the rule given above.

* Nucleus extraventricularis corp. striat.

† Given from memory; I do not know that they are to be found in print.

The next step is to raise the medulla oblongata and cerebellum, and tear away the membranes beneath them which cover the great transverse fissure of the brain. Then, by a second series of cuts made from behind forwards, the mass of ganglia, principally at that part the thalamus opticus, is separated from its connections with the occipital and parietal, and the posterior half of the frontal lobes.

It only remains to enucleate the caput corporis striati from its bed in the white substance of the frontal lobe. This is done by laying the knife transversely on its flat with its edge just in front of the anterior perforated space, and cutting forwards and downwards. If the cut has not been carried forward far enough to surround the bulging head of the ganglion completely, the gray color of its cut surface will reveal the fact. The entire operation, apparently so complicated, is after some practice performed in a very few moments and with great precision. If it be desirable to weigh the different lobes and ganglia separately, as Prof. Meynert is in the habit of doing, the dissection may be continued as follows; otherwise the examination may be completed by making a number of cuts into the various parts perpendicularly to their surface:

A longitudinal cut through the corpus callosum separates the hemispheres from one another.

To separate the frontal lobe from the parietal, the fissure of Rolando, inasmuch as it is a constant fissure common also to most of the apes, is chosen as a guide. The operation is best performed with a single cut of a large pair of scissors.

The parietal lobe is separated from the occipital by cutting through with the scissors from the occipito-parietal fissure into the posterior branch of the fissure of Sylvius.

In separating the thalamus opticus from the corpus striatum, one blade of the scissors is placed to the inner side of the stria cornea, the other to the outer side of the tractus opticus. The cut passes though the capsula interna with little or no injury to either ganglion. The limits of the corp. quadrigem., cerebellum and pons Varolii are sufficiently evident. The medulla oblongata ends with the completion of the decussation of the pyramids.

Prof. Meynert has divided in this way, and weighed in parts, upwards of 1,000 brains, with interesting results, not yet fully made public. Among them, the disproportionate atrophy of the frontal lobes in cases of progressive paralysis of the insane, may be mentioned as having been constantly found. In one or more cases of unilateral chorea, the corpus striatum of the opposite side was found to have lost weight distinctly.

The accuracy of the results obtained in this manner is the more to be relied on, in consideration of the fact that if a loss or gain in weight affecting any given part is only apparent, it will be found compensated for by a corresponding gain or loss in the comple-

mentary part, and the observation thereby controlled. The membranes are left adherent to the lobes to which they belong.

The thickness of the cortex cerebri may be estimated by a cut, made always at the same point, and in the same direction.*—*Boston Med. and Surg. Journal.*

A Case of Traumatic Tetanus Successfully Treated with Calabar Bean. By J. A. DUNCAN, M.D., Toledo, O. (Read before the Toledo Medical Society.)

Mr. J. A., aged 17, German laborer. On June 13th, 1873, became faint (from ague) and fell with his right fore-arm against a circular saw, which nearly severed it just above the wrist. Amputation was made an inch above the injury soon after. Late in the afternoon of same day, having symptoms of ague, I gave him ordinary doses of quiniæ sulph. and iron, and they did not return. The wound seemed to do well, and on the fourth day he walked half a mile to my office to get it dressed. He continued to do so until the thirteenth day from injury; this day he complained of pain in the right ear. As his tongue was coated, and he had taken no quinine for eight days, I suspected a relapse of ague, and gave him 5 gr. doses of quinine every three hours. The pain in the ear ceased at the third dose.

At 9 A. M. the next day (fourteenth from injury), on reaching for his hat to come to my office he was seized with a spasm and fell to the floor. I arrived in fifteen minutes, and found him suffering from most intense pain in epigastrium, at base of brain, and down the entire spine. The body was bent backwards, in a state of rigid opisthotonos. Could open his jaws some, but trismus was complete in an hour.

The brows were corrugated, and the "risus sardonicus" was well marked. Respiration was so difficult, from the muscular spasms, that I thought at times he would suffocate. During the four following days so severe were the paroxysms that he would be thrown violently to one side, nor was the tonic spasm of the muscular system completely relaxed at any time.

Gave first a cathartic of podophyllin and rhubarb, and followed with enormous doses of opium, hydrate of chloral, belladonna, ether and bromide of potassium, during these four days, without apparent benefit. It was then advised to resort to the calabar bean. A tincture was obtained, containing one grain of the powdered bean to m. iv of the menstruum. Gave 14 drops at once. Retention of urine for twenty-six hours seemed to require atten-

* For this purpose a small, graduated glass tube, with sharpened edges, which has recently been described, would be of service. A piece of the cortex is simply punched out, and examined through the glass. (v. West-Riding Hospital Reports for 1873.)

tion, but I was unable to pass the catheter, on account of the spasmodic contraction at neck of bladder. Tincture of calabar bean was ordered in 9 drop doses every two hours. After the lapse of four hours I found patient almost relaxed, and that he had passed more than a quart of urine, voluntarily, about half an hour after the first dose. The pulse had fallen from 104 to 80, and there was not half the pain complained of previously.

Continued treatment. Next day found he had slept two or three hours during the night. Added quinine grs. iii, + tr. ferri chlor., m. vi., alternated with tr. of calabar bean. Sixth day (of tetanus) no better; ordered 12 drops of the latter every two hours. Seventh day, found him asleep, with pulse at 80; had now slept seven consecutive hours, and had taken no medicine for that length of time. He awoke with a spasm, and his pulse rose in one minute to 140! As the succeeding spasms were worse than on previous day, I gave 15 drops of tr. calabar bean at once; in half an hour he was better; continued the same dose every two hours. Called at 4 P. M. same day: found his eyes glaring; respiration 16, pulse 54, and free from pain, but with occasional slight twitchings of limbs.

Reduced dose to ten drops every two hours, and continued it for three days. On ninth day of tetanus he refused to take medicine from 9 P. M. to 9 A. M. next day, when I found him much worse; pulse 120, respiration 35, sleepless, with frequent and intense spasms, constantly getting more so. Gave 15 drops of calabar bean + 15 grs. of hydrate of chloral, which soon relaxed the muscles, and he fell asleep. I ordered him to be awakened every two hours, and the dose (of c. b.) repeated. This was done for the three days following, from which time he improved rapidly, the chloral being given every four hours the first day, and only at night after the third day.

Twelfth day, much better. Gave tr. of calabar bean every three hours in 8 drop doses, and continued it for, the next six days, without much change for the better. Nineteenth day, gave 15 drops every three hours for the entire day, and then discontinued it altogether, as this seemed to be the *coup de grace;* for, on the following day (twentieth day of tetanus) I found my patient sitting on the edge of the bed, just finishing a gallon bowl full of beef soup and sweet milk, with bread soaked in it, and "yet he was not happy!" He wanted more of the same sort, or else some *beer*, he didn't care which. Twenty-first day, able to walk around the yard, but was very weak and emaciated. Most of the time during the attack his body was covered with profuse and clammy perspiration, which was cool on the exposed surfaces of the body. I regret to say the temperature was not noted. Some stimulants and the usual nourishing liquid food were given through a gum catheter by the mouth, it being difficult to get it between his teeth at all times.

After the calabar bean was given he had no more urinary trouble. His bowels became regular after opium was discontinued. His appetite was good, and at times ravenous; *e. g.*, the seventh day of tetanus he took three quarts of boiled milk, immediately followed with one and a half pints of strong beef tea and two ounces of sherry wine; an hour afterwards two-thirds of a quart of dried cherry soup or tea. Prior to taking calabar bean, he experienced great difficulty in swallowing, but while under its influence could do so with comparative ease. On tenth day could open jaws one-fourth of an inch; twelfth day, could protrude tongue; at close of tenth day profuse sweating ceased. The wound had healed, except a small orifice at the centre as large as a goose quill, from which a little pus could be squeezed, at the end of third week from injury. On fourth day a little erysipelatous redness appeared on the fore-arm, and spread up the arm some, but at the end of seventh day from injury this had all gone, nor did it re-appear.

At no time was there any tenderness over the median, or other nervous trunks leading from the injured parts. There was tenderness over the unhealed portion of the stump at times, apparently over the anterior inter-osseous nerve.

Lastly, the injured arm or limb was never noticed to be affected with spasm. Evidently, from this and other reported cases, we have in the calabar bean a remedy which is a powerful and safe *spinal* and *arterial* sedative, which, if properly administered and combined with other agents, will save many cases of tetanus which would otherwise die.

Cold Infusion of Green Coffee in Gout.—Dr. Monchaux communicates to *L'Abeille Medicale* his experience in the use of cold infusion of green coffee in the treatment of gout. He directs his patients to take a tablespoonful of green coffee, place it in a tumbler, half fill the latter with water at the temperature of the atmosphere, and allow it to stand for twenty-four hours. In the morning the liquid is to be swallowed, an equal quantity of water added, and taken the following morning; thus the same quantity of coffee will serve for two doses. The liquid thus obtained has little savor; it is more or less distinctly green according to the species of coffee employed. Dr. Monchaux does not explain the mode of action of the remedy upon the uric diathesis. He inclines to the belief that it acts against the effects of the disease rather than on the disease itself, and that, in order to prevent a recurrence of gout, it is only necessary to make a daily use of the remedy indicated by him. He observes that the remedy is an old one, and that, however difficult it may be to explain the precise action, the efficiency of the remedy is acknowledged. He had himself used it during three years, and with the result that his bi-annual attacks of gout had completely disappeared.—*The Doctor.*

Editors' Book Table.

[NOTE. — All works reviewed in the columns of the CHICAGO MEDICAL JOURNAL may be found in the extensive stock of W. B. KEEN, COOKE & Co., whose catalogue of Medical Books will be sent to any address upon request.]

BOOKS RECEIVED.

A Manual of Medical Jurisprudence. By ALFRED SWAINE TAYLOR, M.D., F.R.S., Fellow of the Royal College of Physicians, and Professor of Medical Jurisprudence and Chemistry, in Guy's Hospital. Seventh American Edition, etc., by JOHN J. REESE, M.D., Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania, etc., etc. Philadelphia: Henry C. Lea. 1873.

It is no more than strict justice to term this the most useful manual of Medical Jurisprudence within the reach of the majority of American physicians, in saying which we are only expressing verbally, what is practically apparent in the fact, that this is the seventh American edition of the work. Those of our readers who have not yet supplied themselves with this indispensable addition to the physician's library, and whose professional cares do not permit the cultivation of medical jurisprudence as a special study, but must confine themselves to a knowledge of its outlines, will find in the manual before us a most comprehensive summary of the science. The American Editor has enriched the work by the interpolation of copious notes of his own, and also of the former Editors, Dr. Hartshorne and Mr. Penrose.

Of the many portions of the work deserving attention we specially designate the second chapter, referring to the duties and responsibilities and to the unsatisfactory position of medical witnesses, which may be studied with profit by the majority of medical men who are occasionally subjected to the ordeal of the witness stand in a court, and it is certain that a thorough appreciation of the rules herein set forth would go far to enable medical witnesses to protect themselves from the imputations of unfairness so frequently cast upon them.

According to the English code, there are no "medical secrets" recognized by the law, "the law concedes no special privilege of this nature to members of the medical profession." "All ques-

tions must be answered, provided they are relevant to the case,' which may be a very good law, but is certainly very poor justice, in its application sapping the very foundations of professional confidence. It is gratifying to know that in this country this disagreeable necessity has been removed by a more liberal system of jurisprudence, which declares that "no person duly authorized to practice medicine or surgery shall be allowed to disclose any information which he may have acquired in a professional character, and which information was necessary to enable him to prescribe for such patient as a physician, or to do any act for him as a surgeon." The "rules for the delivery of evidence" are excellent.

The portion of the work devoted to poisons is voluminous and comprehensive. The deduction from the celebrated Wharton case which occurred so recently in this country, is *ex parte*, and will find few endorsers amongst those most familiar with the facts.

The chapters upon the subject of rape are most appropriately terminated by the famous decision of Sancho Panza, the Governor of Barataria, which will cover most of the cases of this sort.

The subject of insanity is well treated; the section relating to the discharge of lunatics is especially commendable, and one sentence merits the earnest attention of jurists upon this side of the water. "One who has been guilty of a heinous crime like murder, should never on any pretense be discharged."

It would be of inestimable value to the cause of justice, and to the medical profession, if our law makers could be clearly impressed with the spirit of the subjoined quotation. "One source of difficulty on these occasions is, that medical witnesses are allowed to be separately sought out and summoned by those who are for and against the commission, and the opinions given by them often exactly neutralize each other. Under these circumstances they are converted into partisans in the cause as much as if they were counsel. It has been well remarked, that a man even unknown to himself, with the purest intentions and the most perfect rectitude, will insensibly lean to the side on which he has been consulted or employed. The public are apt to infer from such conflicting opinions emanating from men of equal experience, that the difference cannot depend essentially upon the medical facts of a case, and that the question might as well or even better be determined by non-professional persons. One remedy for this serious evil

would be, that medical experts on such occasions should be selected and appointed by the Lord Chancellor," etc., etc.

Pursuing the same subject (of insanity) the author refers to the apparently irreconcileable opinions of jurists and physicians regarding the legal responsibility of criminal lunatics, and insists, very justly, upon the fallacy of the knowledge of right and wrong as a test of criminal responsibility.

The "relations of medical men with insurance offices" are carefully and justly considered. This subject is now receiving special attention by some of the more prominent medical journals, and it is gratifying to perceive the unanimity of opinion and sentiment upon this subject upon both sides of the water.

It is impossible in the limited space at our command to extend our notice of this valuable manual, which reflects honor upon author, editor, and publisher. H.

Lectures on Clinical Medicine. By A. TROUSSEAU, late Professor of Clinical Medicine in the Faculty of Medicine, Paris; Physician to the Hotel Dieu, etc., etc. Translated from the third revised and enlarged edition, by SIR JNO. ROSE CORMACK, M.D., F.R.S.E., Fellow of the Royal College of Physicians of Edinburgh, etc.; and VICTOR BAZIRE, M.D., assistant Physician to the National Hospital for the Paralyzed. Complete in two volumes. Vol I. Philadelphia: Lindsay & Blakiston. 1873.

It would be entirely out of place to attempt a criticism of the work of this great master in medicine, Trousseau; we will, however, take occasion to congratulate the profession upon being placed in possession of this rich store of medical literature in a form at once complete, compact, and cheap. Until the year 1867, Trousseau was unknown except by name to the great mass of American practitioners, only a few of those familiar with his native tongue having had access to his writings. In that year the English edition of five volumes was presented to the profession on this side of the ocean, and, notwithstanding its costliness, met with a most cordial reception. The publishers of that edition have added another to the long list of obligations already due them from American medical students, in bringing the work within the reach of a larger number by reducing its price one-half, and its bulk from five volumes to two, without, however, any essential changes in the subject matter.

While we deprecate blind obedience to prescribed authority, to the exclusion of physiological analysis and logical induction, yet the young practitioner will find no safer guide, the elder no wiser counsellor, than this greatest of modern French physicians, Trousseau. H.

A Manual of Practical Hygiene, intended especially for Medical Officers of the Army and for Civil Medical Officers of Health. By EDMUND PARKES, M.D., F.R.S., etc., etc. Fourth edition. Philadelphia: Lindsay & Blakiston. 1873.

The present edition of Dr. Parkes' valuable Manual presents a marked improvement over its predecessor. Originally intended as a text book of hygiene for the use of the students of the Army Medical School, it has been subsequently amplified and made to include subjects of interest not only to practitioners in civil life, but to the laity likewise, who cannot fail to derive much valuable practical instruction from the study of its pages.

The present edition has been advantageously divided into two books. The first comprises the general hygienic relations of water, air, food and drink, soil, dwellings, disposal of sewage, exercise, clothing, etc., etc. The subjects are treated elaborately, and in a manner fully up to the times. While studying a work of this character, one cannot but be astonished at the vast distance attained by hygienic science in advance of its practical application, and feel convinced that, by far the greater portion of the diseases which afflict humanity might be obviated by an intelligent observance of hygienic rules.

The second book comprises the hygenic relations of the soldier, and of course is not so directly valuable to the medical practitioner in civil life, nevertheless there is much even in this portion of the work which is applicable to other social conditions than those for which it was especially written.

We commend the book most heartily to all needing instruction, (and who does not?) in hygiene. To the layman it will be found instructive, and to the physician, who is, *ex officio*, looked up to as instructor in all knowledge having for its object the protection and preservation of human health, and who must therefore keep up with the times, it will be found indispensable: but most of all do we urge upon municipal sanitary bodies the adoption of the work as a text book, for the instruction of officers of health, feeling

confident that much good would result from the practical application of hygienic principles to the construction of sanitary codes, which are now in too many instances based upon the crude notions of sciolists and petty politicians.

It is only by means of municipal interposition that communities can be educated in hygiene. Individual instruction by physicians, it is true, will accomplish something, but that amount, even, of instruction cannot be given by those who are themselves uneducated. H.

Chemistry, Inorganic and Organic, with Experiments. By CHARLES LOUDON BLOXAM, Professor of Chemistry in King's College, London, etc., etc., etc. From the second and revised English edition. Philadelphia: Henry C. Lea. 1873.

One of the best text books of chemistry yet published, comprising, in three divisions, the chemistry of non-metallic elements and their compounds, the chemistry of metals and metallic compounds, and organic chemistry.

The author has adopted in this edition the atomic system of notation, which of course necessitated the re-arrangement of portions of the work, which, while it may somewhat disturb the accepted ideas of elementary relations, cannot fail ultimately to conduce to certainty in method of study and to accuracy of results.

The study of organic chemistry is too much neglected by medical men, and the ignorance resulting therefrom retards materially our progress in physiological investigation with which chemistry should go hand in hand. The author has devoted a few pages to the consideration of the application of chemical principles to certain of the arts.

The work is well and freely illustrated, and as a whole cannot fail to prove one of the valuable text books in the science, and not less so as a work of reference which should find a place upon every physician's study table. H.

Report of the Columbia Hospital for Women, and Lying-in Asylum, Washington, D. C. By J. HARRY THOMPSON, A.M., M.D., Surgeon-in-Chief. With an Appendix. Washington: Government Printing Office. 1873.

In February, 1866, the Columbia Hospital for Women was opened under the auspices of the United States Government in

the city of Washington, in anticipation of a charter which was granted by Congress on the following first of June. The Report before us is a *resume* of the operations of the institution from its commencement to the end of June, 1872. It was prepared by the Surgeon-in-Chief, Dr. J. Harry Thompson, who, notwithstanding the brief period of time allotted to the work (about six months) has managed, with the aid of the assistant surgeons in charge of the dispensary attached to the hospital, to present us with a book of four hundred and thirty quarto pages.

The number of surgical operations performed in the hospital during the time embraced by the Report was about seven hundred, of which only four resulted fatally, and, adds Dr. Thompson, "During the last four years, not one single case of death has occurred as the result of surgical interference, although within that time a large number of very important operations have been performed, all of which have been successful."

We venture the assertion that such a remarkable degree of success as this statement indicates is wholly unprecedented in hospital practice.

From the summarized report we learn that there have been admitted to the hospital 11,455 patients, of whom 9,457 were cured, 1,081 relieved, 81 died, 257 were incurable, 7 were sent to Insane Asylum; in 442 the result of treatment was unknown, and 150 were still under treatment June 30, 1872.

The Report commences with the details of thirty-four operations for the radical cure of ruptured perineum, all of which were successful.

The operation for this accident as performed by Dr. Thompson does not differ in any important particular from that usually adopted by surgeons of the present day. It is essentially the same as that introduced by Dr. Baker Brown, differing from this latter, however, in that our author objects to the division of the sphincter ani except in special cases, preferring to rupture some of its muscular fibres by forcible dilatation, in the manner recommended and practiced by Professor Van Buren, of New York. He likewise prefers silver wire to the waxed thread both for the deep and superficial sutures; and instead of encouraging a constipated condition of the bowels after the operation, he endeavors to secure their daily evacuation.

Next follow the reports of two interesting cases of vesico-vaginal fistula, and in the chapter on this subject our author commits the blunder of introducing eight pages of unnecessary matter in the shape of an extract from Dr. Sims' address to the New York Academy of Medicine—a very excellent thing in its place, but very much out of place, we think, in this report. And inasmuch as we have very little fault to find either with our author or his book—this latter being for the most part excellent—it will be as well, perhaps, that we should put all our fault-finding in this one place. The introduction of the lengthy extract just alluded to is but one evidence of what seems to have been a governing principle with Dr. Thompson, namely, to make a very large book from very little material. Other examples of this disposition to fill up space are the introduction of Tyler Smith's description of the minute anatomy of the os and cervix uteri, which, with the wood-cuts accompanying it, occupies nineteen pages; Morgagne's cases of foreign bodies in the bladder, thirteen and a half pages, and various authors on cancer, sixteen pages. The wood engravings—most of which, by the way, are wretched specimens of the art—are made to occupy much more space than necessary; and when we consider that in addition to all this expansion nearly two-thirds of each page is blank margin, itwill be readily understood that the kernel of this book might have been placed in a much smaller shell.

The remaining chapters of the book are devoted to the following subjects: Vaginal Cystocele and Rectocele; Diseases and Displacements of the Uterus; Uterine Tumors; Carcinoma Uteri; Diseases of the Vagina and Cervix Uteri; Chronic Cervical Metritis and Endometritis; Foreign Bodies in the Bladder; Extirpation of the Parotid Gland; Pelvic Cellulitis; Diseases of the Rectum. Details of cases under each head, the kind of operation employed, and the result of treatment, are fully given.

The Appendix consists of reports from the surgeons and physicians in charge of the different departments of the hospital dispensary, as follows: Diseases of Women, by Dr. F. A. Ashford; Diseases of Children, by Dr. Samuel C. Busey; Diseases of the Eye and Ear, by Dr. D. Webster Prentiss. These reports each contain much valuable matter, although their usefulness is somewhat marred, like that of the main report, by the too frequent evidences of hasty preparation.

A. R. J.

A Treatise on the Pneumatic Aspiration of Morbid Fluids: a Medico-Chirurgical Method of Diagnosis and Treatment of Cysts and Abscesses of the Liver, Strangulated Hernia, Retention of Urine, Pericarditis, Pleurisy, Hydrarthrosis, etc. By GEORGES DIEULAFOY, Gold Medallist of the Hospitals of Paris. Philadelphia: J. B. Lippincott & Co. 1873.

A complete summary of the ideas which have occupied the medical mind concerning the injurious influence of fluid accumulations in closed cavities and organs of the body, the advantage to be derived from their removal, and the various appliances which have from time to time been adapted to the accomplishment of that object.

Whilst the disastrous effects of the accumulation of morbid fluids in cavities and organs have been recognized and appreciated from a very early period of the history of medicine, as is manifest from the numerous attempts which have been made to effect their removal, the true principle upon which such attempts must necessarily rest for their success has, it seems, eluded the perception of all experimenters, until the presentation of the essay of Dr. Dieulafoy to the French Academy of Medicine in 1867.

This true principle of pneumatic aspiration, as laid down by Dr. Dieulafoy, "is invariable; it consists in the fineness of the needle, and the creation of a previous vacuum;" in other words, upon the exclusion of air and the prevention of the escape of the fluids interstitially. The author's experiments have directed him to the following conclusion: "*It is always possible, owing to aspiration, to search for a fluid collection, without any danger, whatever may be its seat or nature.*" A proposition so bold and radical demands for its substantiation the most abundant and convincing evidence, inasmuch as its establishment must revolutionize many of our notions which time and prescript have rendered almost axiomatic. It is but just to the author, however, to admit that his numerous carefully conducted and conclusive experiments have supplied all the evidence which the most incredulous could demand, and mark the introduction of pneumatic aspiration as the beginning of a new era in rational medicine—constituting a new triumph of logical induction from observed phenomena to a scientific principle, entitled to take rank with vaccination and auscultation. H.

Lectures on Madness, in its Medical, Legal and Social Aspects. By EDGAR SHEPPARD, M.D., Member of the Royal College of Physicians, Professor of Psychological Medicine in King's College, London, and one of the Medical Superintendents of the Middlesex County Lunatic Asylum at Colney Hatch. Philadelphia: Lindsay & Blakiston. 1873.

The Council of King's College probably never demonstrated "their wisdom" more clearly than when "honoring an old student" with the appointment to the chair of Psychological Medicine in the institution under their charge. We have but one objection to the book, its brevity. What Dr. Sheppard has told us about insanity is so well told, so clear, so concise, so practical, that we close the book with regret that he has not gone more fully into detail and elaborated its various subjects more minutely; and yet that would have impaired the usefulness of the lectures for their destined end, *i. e.*, the instruction of students in the elements of psychological medicine; and for this end we know no work in the English language so well adapted. Dr. Sheppard gives in these lectures his own conclusion regarding insanity, which although by no means dogmatical, are independent, and, as far as we are able to judge, logical. This little book, while intended for the instruction of medical students, would conduce greatly to the enlightenment of lawyers and judges, and tend to remove from their minds the influence of certain legal hypotheses regarding insanity, which, based upon false physiology, have served as foundations for prejudice and injustice. When these begin to study madness from a physiological rather than from a metaphysical standpoint, then will we begin to correctly estimate its social and legal relations, and definitely to fix the status of its victims. H.

Insanity and its Relations to Crime. A Text and a Commentary. By WM. A. HAMMOND, M.D., Professor of Diseases of the Mind and Nervous System, and of Clinical Medicine in the Bellevue Hospital Medical College, etc., etc., etc.

Upon the vexed question, which the title to the book before us involves, law and medicine seem to be arrayed on opposite sides; the first claiming as its victims all who transgress its edicts, no matter what their mental condition, provided "they can distinguish right from wrong;" the second claiming as its patients

those whose transgressions are involuntary. The reader of Dr. Hammond's "Text and Commentary," will entertain a reasonable doubt whether the author may not have "gone over to the other side," and assumed the role of counsel for the prosecution, endeavoring to secure the (almost) indiscriminate punishment of those whose protection he should be most desirous to secure. We should, however, be sorry to believe that the majority of the legal profession endorse some of the propositions advanced by the author, in which he appears to separate the rights of society from those of the individual, and to establish an antagonism between them which appears to be totally illogical. The proposition that "society has no more business with abstract justice than it has with any other bit of philosophy," savors too strongly of Communism.

We cannot but think that in his zeal for the protection of society and the punishment of crime, the author disregards too blindly the protection of individuals, the social units, without which society would not exist.

The consequences which might be logically deduced by extension of the parallel cited below, would be to reduce society to a condition horrible to contemplate. "Even if actual cerebral disease be the cause of the irresistible impulse, it does not materially detract from the right of society to protect itself against injury from those in whom it exists." To this there can be no objection, but mark the mode which is suggested in the context, viz.: "A dog afflicted with hydrophobia going about snapping at those who come in its way, is destroyed in order that it may not bite us, and may not poison other dogs, who, in their turn, may bite us. The dog is suffering from a disease of its brain which gives it an irresistible impulse to bite. We kill it without the slightest hesitation." We would be almost equally justifiable in killing the insane with irresistible impulses to commit homicide, if we did not possess places in which to confine them safely. An extension of such reasoning would justify the killing of a small-pox patient in order to protect ourselves from the probable fatal consequences of contagion.

If the fallacy of such reasoning needed demonstration it would be found in the spirit of Christian philanthropy of the peasants of Gheel, in Belgium, where every cottage is a lunatic asylum and every peasant a keeper. H.

Pharmaceutical Lexicon: a Dictionary of Pharmaceutical Science. Containing a Concise Explanation of the Varied Subjects and Terms of Pharmacy, with Appropriate Selections from the Collateral Sciences, etc., etc. By H. V. SWERINGEN, Member of the American Pharmaceutical Association, etc. Philadelphia: Lindsay & Blakiston. 1873.

Inasmuch as the author of the above work, in his preface, deprecates criticism, we forbear to say much that might be said of the injurious influence of compendiums in general, upon the progress of scientific study.

Such a work as this, while doubtless written in good faith, to subserve the purpose of a work of reference for the busy pharmacist or physician, is liable to the abuse of encouraging idleness and ignorance, by giving to the pretender and sciolist a "ready method" of seeming to possess knowledge only to be truly acquired by long years of patient study and investigation.

We must protest against the author's philological theories advanced in the preface and practically applied throughout the book. Words, independent of their derivations, are arbitrary symbols, empty sounds, whose use simply hastens the process of phonetic corruption which all languages seem doomed to sustain, and from which it should be the duty of every scholar to protect them.

The Pharmaceutical Lexicon certainly contains a good deal of useful information, and thus far we commend it cheerfully to those who need a manual of quick and easy reference for popular use. H.

Contributions to Practical Surgery. By GEORGE W. NORRIS, M.D., late Surgeon to the Pennsylvania Hospital; Vice-President of the College of Physicians of Philadelphia, etc., etc. Philadelphia: Lindsay & Blakiston. 1873.

The above is a republication in book form of the author's essays which have already appeared from time to time in the *American Journal of Medical Sciences*, and present his views and opinions upon the various points in practical surgery which they comprehend. The opinions of Dr. Norris are entitled to respect, not only from his well-earned reputation as a surgeon, and his long experience and ample opportunities for observation and experiment, but also from the mass of evidence brought to sustain them in the shape of statistics carefully tabulated and apparently honestly compiled.

That the statistics do not include operations of very recent date, is to be regretted, as they might thus escape the suspicion of unfairness, to which most statistical arguments are susceptible. They will, however, be very acceptable to a numerous class of practitioners dependent upon the opinions of standard authorities, and not having sufficient data within their own experience to justify the formation of individual conclusion. The whole book bears the impress of the patient and laborious study, the accurate analysis, and the conscientious criticism of a skillful surgeon, and an accomplished scholar. These "Contributions to Practical Surgery" will be welcomed by the profession and accepted as actual additions to the stock of human knowledge. H.

Editorial.

Are Lunatics Criminals?

The subject of the legal status of criminal lunatics has absorbed the attention of the medical and legal professions and of the public so deeply of late, that there is some danger of confounding the greater with the lesser category, and regarding all who may be so unfortunate as to have lost their wits as criminals.

Whether this danger exist theoretically may or may not be true, but certainly the practical effects of such a theory are already apparent in this city; and while the sufferer from small-pox or a broken leg is tenderly conveyed to befitting hospital accommodation provided for his reception by the county commissioners, the still more unfortunate sufferer from disease of the brain is dragged like a felon to the nearest police station or to the county jail, to share the cells of vagabonds and convicts. It would be well if some of our philanthropists (and there are many true ones in our midst) could visit occasionally the County Court of Cook county upon a day when the victims of brain disease are brought before it for examination. They would then see, perhaps, some respected citizen, some valued friend, some beloved relative, even, who had been decided to be insane, sent, by order of the court, to the jail below. The learned and humane judge who presides over

this court deplores most deeply the necessity which compels him, having due regard to the protection of society, to order the incarceration of these unfortunate beings in the only place at his disposal for the purpose.

This state of affairs is a crying evil, demanding the prompt attention of the county commissioners, to whose notice the subject has been brought repeatedly and urgently, but thus far without avail. Will they wait until one of their own number shall be reduced to this fearful condition, and, becoming too violent to be controlled by his family, be locked up in the filthy cells of this abode of horrors, to become the jest of malefactors, and the prey of vermin?

Within a few days a young gentleman, for many years a resident of the North Side, and a member of a well-known commercial firm, had an attack of epileptic mania, during which he became so violent as to endanger the safety of his young wife and infant child. In default of other asylum he was consigned to a cell of the nearest police station house, and, after examination before the County Court, to the county jail, until arrangements could be made for placing him in the asylum for the insane. Could the county commissioners have seen the grief of that broken-hearted young wife and mother, on parting from her husband at the threshold of his prison, their hearts, perhaps, would have been awakened to the necessity of providing a temporary asylum for such cases.

We have seen, in a cell of a police station house in this city, the wife of a respectable citizen, who by reason of her insanity could not be properly cared for at home, in a perfectly nude condition, exposed to the gaze of any policeman or curious idler who might choose to peer through the grating of her cell-door, the apartment itself being too filthy to justify its use even by an animal.

Our county commissioners have at last provided a receptacle for the unrecognized dead, the "Morgue," and we hope will some day provide for living sufferers from all disease whether of body or mind; until they do this, an essential part of their functions remains undischarged.

It is to be hoped that the people, through the secular press, their mouth-piece, will clamor without cessation until this urgent need is supplied. H.

Loot.

Normal Ovariotomy.

The new operation of normal ovariotomy is engaging the thought and comment of the profession so generally at the present time as to make everything bearing upon the subject of interest to our readers.

It affords us pleasure to be able to put upon record some additional facts, derived from a second case operated upon by Prof. J. T. Gilmore, of Mobile, Alabama, and kindly furnished us in the subjoined letter from that skilled surgeon:

MOBILE, ALA., June 15, 1873.

Dear Doctor—Your letter relative to a case of normal ovariotomy was received some days ago.

The case I operated upon was unlike yours, in having an atrophied uterus of many years duration. Whilst the menstrual irritation had, since the menopause, been productive of great discomfort, it was only within the six months immediately preceding the operation that it had threatened life by the violent congestions of the brain which were recurring regularly every two weeks at the period of the operation, at which time she had become almost idiotic.

She was in bad plight for any operative procedure at the time it was done, and yet, so threatening were the paroxysms, it was feared that another one would destroy her life.

Drs. Ketchum and Gaines had attended her for years and had resorted to every resource in the effort to re-establish the menstrual flow, but without avail, and they both assented to the proposition that if normal ovariotomy was a legitimate operation under any circumstances, the case in question justly claimed its benefits. Dr. Ketchum assented to the operation. Dr. Gaines hesitated, but his objection presented no real basis upon which to ground an opposition. Drs. W. H. Anderson, Ketchum and Gaines discussed the probable physiological effect of a removal of the ovaries, and all agreed that without some such intervention the patient would certainly not get through with many more such attacks as she had recently endured.

Dr. Anderson, who fills the Chair of Physiology in our medical college, urged the operation upon physiological grounds. The absence of the uterus rendered it improbable that there could ever be any more menstrual elimination, and the purpose of the operation would be to destroy, as far as possible, the menstrual irritation, by putting a stop to ovulation.

The operation was performed in December last.

The peritonitis that was lighted up, and the cellulitis which followed, ended in abscess, which is still discharging through the

abdominal wall, at the point of incision. The patient barely escaped with her life.

Her brain is now relieved. Every two weeks she has still some hysterical symptoms, *i. e.*, choking sensations, with the feeling as though there were some foreign body in the throat. There has been no menstrual show whatever. There is still discharging from the abdominal fistula about an ounce and a half of thin pus daily, and the cavity of the abscess I wash out every third or fourth day with carbolized water, through a catheter and syringe. The abdominal discharge is lessening daily, and there are noticeable changes in her features and mammary glands.

I shall await the full results of the case before publishing it in detail. This is an important subject you have opened up to the profession, and deserves a most honest and careful detail of cases operated. Yours truly, J. T. GILMORE.

We hope, at a proper time in the future, to be able to lay before our readers the full particulars of this case, the operation and its results, both physiological and curative.—*Atlanta Med. and Surg. Jour.*

Fracture of the Clavicle Treated by Placing the Arm behind the Back.

A patient was recently under M. Broca's care who had fractured, by a fall, his left clavicle, near the middle of the bone. The fracture was oblique, from above downwards and from without inwards, the fragments riding over one another to a considerable extent. Various plans of treatment were tried, but without effecting permanent reduction into a good position. At length, calling to mind a communication made last year by Dr. Michel, to the Societe de Chirurgie, M. Broca placed the limb in a semi-flexed position behind the back, when the most perfect confluence of the fragments occurred. The arm was fixed in this position by a bandage, and kept in it for eighteen days. At the expiration of this time the bandage was removed and the arm set at liberty. When it was found that the parts were sufficiently consolidated to prevent any likelihood of displacement, the limb was brought forward and kept immovable in a sling for a few days longer. This method of treatment has been regarded as excessively painful, but in this instance the patient only complained of the inconvenience and pain for the first twenty-four hours. At the same time it must be stated that he was a man of considerable nerve. Immediately after his entrance into the hospital, he several times raised his hand to his head, giving a fresh demonstration of the possibility of movement with a fractured clavicle. The result was so good, says M. Broca, that had the patient been a lady, she might have worn a low dress without any disfigurement being observable. The proceeding of placing the hand behind the back in the treatment of fractured clavicle is not quite new, for M. Grout is cited by M. Malgaigne

as having adopted it. M. Broca does not think this plan applicable to all cases, since it compels the patient to sleep on the opposite side; but he agrees with Malgaigne in believing that in some fractures of the clavicle, the broken ends of the bone can only be brought into apposition by placing the upper extremity in special and peculiar positions, which may be quite different in different instances.—*Journal de Medicine*, Tome xliv, 5eme Cahier.—*The Clinic.*

American Public Health Association.

NEW YORK, September 2, 1873.

The Executive Committee of the American Public Health Association have resolved to change the time and place of the adjourned annual meeting, as designated at Cincinnati.

Instead of the meeting proposed to be held at Providence, R. I., in September, it is deemed expedient to designate the city of New York as the place, and Tuesday, the 11th of November, as the time, for the next general meeting of the Association. It is believed that this appointment will best suit the preferences of all members and friends of the Association that can attend the Autumn Meeting. These changes are rendered necessary by the pressure of official and professional duties at this season.

Please communicate to the Secretary at your earliest convenience, such information as you can give respecting papers or reports which will be prepared for that meeting, in order to enable the Executive Committee to issue in advance the synopsis of papers and topics for discussion at the meeting, as required by the Constitution.*

The opening session will begin on Tuesday forenoon of November 11th, and it is expected that important reports and discussions will occupy the attention of the Association for three or four days.

By order of the Executive Committee.

Executive Committee.—Stephen Smith, M.D., President; Edwin M. Snow, M.D., 1st Vice-President; John H. Rauch, M.D., Treasurer; Moreau Morris, M.D.; Henry Hartshorne, M.D.; Francis Bacon, M.D.; William Clendenin, M.D.; C. C. Cox, M.D.; John M. Woodworth, M.D.; Elisha Harris, M.D., Secretary, 301 Mott Street, New York.

* All Committees, and all members preparing scientific reports or papers to be laid before the Association, at its annual meetings, must give, in writing, the title and outline of such reports or papers to the Executive Committee, at least six weeks preceding the date of such meeting, to secure their announcement in the order of business.

Notice.

A Clinic for the Treatment of Diseases of the Brain and Nervous System, will be held at Rush Medical College on every Saturday afternoon throughout the year, by Dr. W. Hay, Adjunct Professor of Theory and Practice.